INDEX TO VOLUME I., 1904.

Readers in search of a given subject will find it useful to bear in mind that the references are in several cases distributed under two or more separate but nearly synonymous headings—such, for instance, as Brain and Cerebral, Heart and Cardiac, Liver and Hepatic, Bicycle and Cycle, Child and Infant, Enteric and Typhoid, Bronchocele, Goitre, and Thyroid, Diabetes Glycosuria, and Sugar, Eye, Ophthalmic, and Vision, &c, &c

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INDEX TO PAGES

es	Date of issue	No	Pages	Date of issue	No	Pages	Date of issue	No
-68	Jan 2nd	4192	629–698	Mar 5th	4201	1253–1322	May 7th	4210
138	,, 9th	4193	699–772	,, 12th	4202	1323–1398	,, 14th	4211
206	,, 16th	4194	773–844	,, 19th	4203	1399–1476	,, 21st	4212
272	,, 23rd	4195	845–908	,, 26th	4204	1477–1548	,, 28th	4213
348	,, 30th	4196	909–972	April 2nd	4205	1549–1632	June 4th	4214
410	Feb 6th	4197	973–1028	,, 9th	4206	1633–1700	,, 11th	4215
484	,, 13th	4198	1029–1096	,, 16th	4207	1701–1768	,, 18th	4216
554	,, 20th	4199	1097–1174	,, 23rd	4208	1769–1834	,, 25th	4217
628	,, 27th	4200	1175–1252	,, 30th	4209			

A

tt Mr T K., Irish medical degree prior 858 727
men embolism and thrombosis of the eral vessels of the 1335
minal cyst, probably of pancreatic origin H A Caley) 1057
minal diagnosis, pelvic lesions in relation 303
minal hysterectomy (Dr Florence N d, 803
minal operations (Prof D MacEwan) [illegible]
[illegible] exion of the [illegible] anæsthesia [illegible] es in 1751 [illegible] ons of the, [illegible]
minal retractors self retaining (Mr W F k) 1287
minal surgery discussion on, at the [illegible] and pro [illegible] onic, some [illegible]
s of 159 208
uta Alake of visit of the to Liverpool, [illegible]
on town council and its medical officer [illegible] th 261 1461
e n dl po sary, 903, 1159 [illegible]
[illegible] lua [illegible] mer [illegible] po [illegible] N
on causes and treatment of (Dr F G ons, 876 pathology of habitual an[illegible]
mplete abortion (Dr W E Fothergill)
, tubal (Dr D Berry Hart), 1725

Abortionist the conviction of an 1013
Abraham, Dr J Johnston mattress sponges, 1751
Abraham, Dr P S, molluscum contagiosum, 1208
Abrahams Dr Bertram L, Friedreich s disease, 655
Abrams, [illegible]
Abscess [illegible] otitic cerebel[illegible] rebral [illegible]
855
Achard M C, "purpura orthostatique," 947, meningitis in typhoid fever 1368
Achill Island small pox on 761
[illegible]
50
Acromegaly (Dr H D Rolleston), 799, (Dr [illegible] 1585 cutane[illegible] nd potassium [illegible] and Mr J D [illegible] n for alleged [illegible]
[illegible] ment case 12 9 against the Downpatrick guardians for medical fees, 1758 for fees for treatment of relatives 1758
Adams Dr G Cooke cancer in Australia, 422 498
Adams Stokes disease 411 syndrome, 1568
[illegible] on)
604
Adenoid tissue, activity of the, in infancy, 1256

Adenoids, treatment of (Dr E. Furniss Potter), 1507
Adenomyoma of the uterus 1057
Adeno-myome des Uterus (Dr Thomas Cullen) (review), 1059
Adhesions, perigastric, the surgical treatment of 357
Adolescent insanity, on the katatonic form of, 173
Adrenalin formula of 369 action of on the metabolism of the bird, 654, poisoning by [illegible]
tion of 1455
Adulteration (see also Substitution)
Adulteration of cod liver oil, 378 538 687, 757, 1700
[illegible] 1801 [illegible] 1310, of [illegible] 549, 593 [illegible] 70, 1393
Advertisement a delightful 696 medical, 842, of thanks to medical men 1395
Advice and prescription 522
Aerated water, a new sparklet syphon for, 1319
Aerated waters, the manufacture of, control of 481
Aerzte (H von Schullern) (review) 1066
Affleck Dr J O acute appendicitis 302
Afghanistan Amir of, 1535 1538 1754 vaccination in 1754
Africa East dentistry in, 957
After care Association 598
After effects of head injuries (Mr T Crisp English) 485 559 632
[illegible] the medical [illegible] 326 [illegible] in human
Agglutination the mechanism of (Mr J Anderson Craw) 434
Agriculture Board of, and anthrax 1684
Agricultural failure and heavy rainfalls 175
Ahlfeld, Prof F, Geburtshilfe (review) 1510

Aids to Surgery (Mr. Joseph Cunning (review), 878
Ailments of Women and Girls (Florence Stacpoole (review, 1359
Air of underground railways in its relation to disease, 738; impure, of churches, 1751
Aitchison, Dr. C. U., tumour of the left auricle, 1572
Aitken, Prof. Andrew Peebles, death of, 1159
Albuminuria, renal opotherapy in, 59; physiological or functional, 143, 509; in the newly born, 315
Albumosuria, myelopathic (Dr. R. C. Bruce, Dr. K. F. Lund, and Dr. P. P. Whitcombe), 1045
Alcock, Nathaniel, Lt.-Col., A.M.S., retired, obituary, 1080
Alcohol in medicine (Dr. T. K. Monro), 1058; use of, in cases of pneumonia, 1672
Alcohol, notes on (review), 98
Alcoholic excess and insanity, 1823 (see also Inebriety)
Alcoholism, social causes of, 1503
Aldrich, Dr. C. J., thrombosis of the jugular veins in pulmonary tuberculosis, 1010; arsenical poisoning and the nails, 1440
Ale, Maxim, 34; India pale (Warwicks and Richardsons), 35; and stout (Barclay, Perkins, and Co.), 1063,
Alexander, Mr. F. W., sporadic small-pox, 465
Alexandra Hospital for Children with Hip Disease, 1333
Alford, Dr. H., J. Report on Taunton Urban District, 1375
Algerian brandies, 730
Algiers, a thermo-mineral establishment in, 1524
Aliens, dirt, and disease (Dr. N. Bishop Harman), 1341
Alimentay canal, mechanism of the (Mr. J. T. Fox), 1207; inflammation of the, general view of, in the year 1826, 1434; sarcomata of the, 1503
Alimentary tract, acute infective gangrenous processes (necroses) of the (Mr. Edred M. Corner), 1334, 1410, 1484,
Alkaptonuria, Prof. W. Osler, 10; hereditary transmission of, 1671
"All for the dear doctor," 595
Allan, Dr. James W., Memoranda on Infectious Diseases for the Use of School Teachers (review), 1061; relation of the pancreas to diabetes, 1343
Allbutt, Prof. Clifford, arterio-sclerosis, 507; remarks by, on the healing art, 1429
Allchin, Dr. W. H, a manual of medicine, 305; Royal Naval Hospital, Haslar, 1076
Allen, Mr. A. H., analytical examination of the urine, 1720
"Allenburys" milk food chocolate, 373
Allingham, Mr. Herbert W., acute suppurative salpingitis, 25; three cases of prostatectomy, 1279
Alopecia areata, etiology of (Dr. Arthur Whitfield), 651
Alopecia, neurotic, of the scalp and face after shock 434
Aluminium for military purposes, 330
Alvus adstricta, 345
Amaas, or Kaffir milk-pox (Dr. W. E. de Korté), 1273
Amaurotic family idiocy, 1807
Ambert, [illegible] in the suprarenal capsules in cases of nephritis, 1297
Ambidextral Culture Society, 522 1246, 1693
Amblyopia, toxic, caused by methyl alcohol, 383
Ambulance Association, or Service (see Metropolitan Street Ambulance Association)
Ambulance, Manual of (Mr. J. S. Riddell) (review), 1730
Ambulance, the auto-car as an, 523
Ambulance work at Northwich, 899
Ambulances, French, for the Russo Japanese war, 691
Ambulances, public, 1519; of Manchester, 1615
Ambulances, street, for London, 377, 592, 735, 821, 947, 1072, 1301, 1365
Ambulatory treatment of fractures of the lower extremity by Hoeffteke's modified Hessing's splint case appliance, 710
Amenorrhœa associated with serious eye symptoms, 876
America or American (see also NEW YORK, CORRESPONDENCE FROM)
America, Medicine in, a Narrative of (review), 306
America, North, standard medical directory of (review), 165
American, professional secrecy in, 181; midwifery in, 520; insanity in, 525
American International Congress on Tuberculosis, 522
American Medical Association and the National Legislative Council, 1022
American Medical Association, New York branch, and the Medical Society of the State of New York, consolidation of the, 763
American nurses for the Japanese army, 763
American Pediatric Society, Transactions of (1902), 372
American Society of Tropical Medicine, 380
American university, a bogus, 969
Amir of Afghanistan's late injury, 1535, 1538, 1754
Ammonia, a case of suicide by, 899
Amputation, double, case of, 95
Amyleine (hydrochlorate of A-dimethyl-amino-B-benzoyl-prophenol), (a new anæsthetic), 1085
Amyotrophic lateral sclerosis, the cerebral form of, 246
Anæmia, malignant, associated with caries of the teeth, 508
Anæmia, miners', 1313
Anæmia, pernicious, the spleen in, 1558; mental symptoms associated with, 1808
Anæmia pseudo leukæmica infantum, 433, 1636
Anæmia, splenic (Dr. J. H. Tonking), 1751
Anæmias, primary and secondary, 1258, 1641
Anærobic apparatus, a new, 515
Anæsthesia, chloroform, by Dubois's apparatus, 153; recent methods of inducing, 303; local, produced by the injection of water, 452; in difficult cases, 615; chloroform and oxygen, 1085; cocaine, local, in abdominal operations, 1313; by ether, the discovery of, 1387; ether, blood changes produced by, in man and the lower animals, 1670
Anæsthesin (a new remedy against sea-sickness), 762
Anæsthetic (see also Post-anæsthetic)
Anæsthetic, a new local, 1085; chloryl, 1732
Anæsthetics, the action of, on plants, 108
Anæsthetists, Society of, Transactions of the, vol. vi. (review), 372
Analgesic and nerve tonic, the action of radium as, 652
Analysis of Kara-hissar-i-Sahib mineral water, 953
Analysts, Public, Society of, 1392

ANALYTICAL RECORDS FROM THE LANCET LABORATORY.—"Tabloid" antifebrine compound, "Tabloid" hydrarg. perchlor. et potassii iodidi; "Soloid" hemisine; Special Scotch whisky; Sterilised cream; Physiologically pure salicylic acid preparations; Maxim ale; Hopogan; Ektogan; Royal double cream Cheddar cheese; Voice pastilles; Cocoa essence; Biedert's milk for infants ("cream mixture"); Biedert's somatose milk for infants and invalids; Hetraline; Pure granulated chocolate; India pale ale; Pautauberge's solution; B B. smoking mixture; Lumley mixture, 34, 35—"Tabloid" zinc valerianate; "Tabloid" tribromide (effervescent); "Allenburys" milk food chocolate; Special dietetic wines; Herrings in tomato sauce; Streckeisen's foods; Resorbin; Peruol; Chloroform - Anschutz; Monte Fiano wine; Natural soda-water; Cigarettes of special manufacture, 373, 374—Sparkling saumur: Dry royal; Brut royal; "Kuma"; Albumenised humanised milk; "Tabloid" ophthalmic dionin; Borothymol, 1511, 1512—Protene foods; Algerian brine crystals; "Sanguinosa," 730, 731—Castorium bromide; Anturic bath salts; "Atomo" cigarettes, 812—Kepler malt extract with hæmoglobin; Manganese and iron citrate (soluble) with quinine; and Manganese and iron citrate (soluble) with strychnine; Ale and stout; Dioxogen; Crystallised digitalin (Nativelle); Cod-ols and Cast-ols, 1062, 1063—Hemisine preparations, "Tabloid," "Soloid," and "Enule," "Enule" quasin, "Enule" soap compound, and "Tabloid" veronal; Scotch whisky; Dutch rusks; Vitofer preparations; Infant's milk food; and Yeast tablets and powder; Lime juice and lime juice cordial; Hæmaboloids and Formolyptol; Ardath cabinet cigars minimum nicotinum; Scandinavian stout, 1360, 1361 – 1) "Tabloid" calomel and opium; and (2) Tabloid zinc valeriana e with iron and arsenic; Chloryl anæsthetic (absolute ethyl chloride); Brandies; Nutrient food (Savore); Evaporated cream; Maltico preparations, 1731, 1732

Analytical examination of urine (Mr. A. H. Allen and Mr A. R. Tankard), 1720
Analytical Records (see also annotations and special articles
Anatomie Dentaire (review), 307
Anatomy and physiology, the teaching of (Dr. W. H. Gaskell), 1075
Anatomy and surgery considered in relation to other branches of learning in 1826, 879
Ancient superstitions, 906
Andaman Islands, health of convicts in tl 1083
Anders, Prof. J. M., A Text-book on t Practice of Medicine (review), 1209; blo changes produced by ether anæsthesia, 167
Anderson, Mr. G. Reinhardt, intestin obstruction, 1787
Anderson, Mr. John, 201
Anderson, Prof. McCall, lupus treated x rays, 997
Andrew, Dr. J. Grant, single hydronephro kidney, 512
Anencephaly, retina and optic nerves in (M M. S. Mayou), 1354
Aneurysm, carotid, case of, 48; Wardro operation for, 111; thoracic, 1056; of t aorta, 1119
Angina, Vincent's, 669
Anglo-American Food Company, 133
Anglo-American Hospital at Ghezireh, openi of the, 901
Anglo-American Medical Association of Berli 465
Angus, Dr. H., medical customs of tl Tibetans, 1282
Animal extracts and serums, treatment disease by, 1127
Animals, experiments on, questions in Parli ment concerning, 624, 967; tuberculosis i 1169, 1828: and the Hackney board guardians, 1296; Experiments on, What w Owe to (Mr. Stephen Paget) (review), 1664
Animal's Guardian, 1373
Ankylosis, temporo-maxillary, operation fo 509
Anklyostoma larvæ (Dr. A. E. Boycott), 1280
Ankylostomiasis, 1002, 1209, 1357, 1419, 154 1756
Annand, Mr. W. F., tetanus, 934
Anning, Mr. G. P., concealed accident hæmorrhage, 368
Annual Charities Register and Digest, 19 (review), 1511
Annual clinical debate of Chelsea Clinic Society, 798
Annual meetings (see Hospitals and Societie annual meetings of)
Anthony, Mr. F. J., death of, 955
Anthrax in Manchester, 760, 904, 1019, 1311; i Cheshire, 1084; infection of a compoun fracture, 1122; industrial, 1206
Anthropometric survey of the United Kingdon 535
Antifebrin compound, "tabloid," 34
Antidiphtheritic serum, administration of, b the mouth, 123
Antidipso, 110
Antidotes to viperine poisons, 354
Anti-malarial operations at Mian Mir (Punjab 637, 659; at Ismailia, 672, 689, 834
Antimony and lead poisoning in a compositor 437
Antiquities, the preservation of, from fire 173
Anti-mosquito convention in New York city 131
Anti Sanatorium Bill, New York State, 131
Antisepsis, anticipatory, 831
Antistreptococcic serum, the use of, 158, 1613; in puerperal *septicæmia*, 437; in scarlet feve and diphtheria, 493; in erysipelas, 577; in metritis, 720
Antitetanic serum, injection of, into the spina [illegible], 642; tetanus treated with, 652, 934
Antitoxin, injections of, into the spinal theca tetanus treated by, 642, 1722; death-rate of cases of diphtheria treated with and without, at Chicago, 669
Antituberculous serum (Dr. Marmorek's), 824, 854, 9 2, 933, 979
Anti typhoid inoculation (Dr. A. E. Wright), 514, 1695
Antivaccination at Heywood, Lancashire, 444
Antivaccination movement in Germany, 963
Antivaccinationist, a well known, action-at-law by, against a medical man, 898
Antivaccinationist guardians and their vac- [illegible]
[illegible] Stephen Paget) review, 1664
Antivivisectionist pronouncement by a bishop, 337
Antivivisectionists and the "jungle theory of morals," 1373; reply of Birmingham University to, 1463
Antrum plug, indiarubber (Mr. Claud Woakes), 811
Anturic bath salts, 812
Aorta, aneurysm of, associated with fibrosis of one lung (Dr. F. J. Smith), 1119; elasticity of the, 1571
Apollinaris water, the source, bottling, and analysis of, 323
Apoplexy, suprarenal, in children, 1496
Apothecaries Act of the year 1815, 677
Apothecaries' Society, London, pass list, 201 342, 476, 621, 903, 1244

Apothecary's bill of account of the year 1806, 551
[illegible] 1, 1; [illegible] 301; [illegible]
[illegible] of, 1566; with perforated gastric ulcer, 1789
Appendix abscess in the recto vesical pouch, 509
Appointments (see also Services, University intelligence)
[illegible] num,
Aristochin, 594
[illegible] ;lsy, 224
[illegible] the, 438
[illegible]
Army (see also India, Military, Royal Army Medical Corps, Royal Military, Services, Soldier, Wars)
[illegible] sen- [illegible] 02; [illegible] and
[illegible]
Army Inefficiency: its Greatest Cause (Dr. A. O. Profeit) (review), 372
[illegible]
Army Medical Reserve, officers of the, pay of, 1818
Army Medical Service: present and future, [illegible]
[illegible] Office
[illegible]
Army reform: second report of Lord Esher's committee, 679
[illegible]
[illegible] Army Medical
[illegible] s' Remedies,"
[illegible]
Arsenical poisoning, 478; transverse white lines on the nails due to, 1440; and the recommendations of the Royal Commission, 1469
[illegible] young, 1355
Arthritism and cancer (Dr. W. Roger Williams), 1820
Artificial respiration, apparatus for maintaining, 616
Arton, Dr. J. H., gonorrhœal infection in the female, 192
Ascaris lumbricoides, symptoms of presence of (Mr. W. H. Haw), 1722
[illegible] potassium,
[illegible] and the
[illegible] Hospital,
[illegible]
Aspirin, 594
Assaults upon children, 1021
Assistance Publique, the budget of, for 1904, 762
[illegible] of the Metropolitan
[illegible] 1380
Association of Poor-law Unions of England [illegible] ses, 140
[illegible] England
[illegible] nt of Sanatoria
[illegible] uction of the
Association for the Training and Supply of Midwives, 594, 1543
[illegible]
[illegible] ants, 1697
Asthenopia, 367
[illegible]
Astley Cooper prize, 1138
Astley, Rev. H. Dukinfield, ambidexterity and primitive man, 1246
Aston Manor, health of, 1158
Astragalus, partial resection of the, for congenital talipes varus, 951, 958; a study of the, 1213
Asylum reports, 328, 388, 536, 688, 746, 955, 1076, 1229, 1373, 1607, 1677
[illegible] See Asylum),
[illegible] ndigent, 835;
[illegible] st per bed of
[illegible]
Atheroma, Dr. T. D. Savill, 506
Atkey, Mr. Oliver, the inquest on Whitaker Wright, 391
Atkinson, Mr. Daniel Mouncey, obituary, 1089
Atlay, Mr. J. B., Sir Henry Wentworth [illegible]
[illegible]
Atrophy of the liver, acute yellow, a case of, 886
Attfield, Dr. D. Harvey, honour conferred upon, 1742
Attorney General v. The Mayor and Corporation of Nottingham, re Small-pox hospital, 676
Aubertin, Dr., changes in the suprarenal [illegible]
[illegible]
Auld, Dr. A. G., 125; lung reflex of Abrams, 253;
Auricle, the left, rupture of, 152
Aural, suppositories (Dr. Frederick Spicer), 663
Aural vertigo (Mr. R. Lake), 1567
Auricle of the ear, value of the, 1290
[illegible] 496
[illegible]
[illegible] health officers, 618—Dismissal of a hospital surgeon, 619—Dental Board, New South Wales, 619—Balmain Friendly Societies' Dispensary, 619, 1088, 1388, 1825—Brunswick Friendly Societies' Dispensary, 619—Sydney Medical Mission, 619—Acute suffocative pulmonary [illegible] small-pox, [illegible] 1088, 138[illegible] Victoria, [illegible] New Bor[illegible] Appointm[illegible] 765—Typ[illegible] Friendly [illegible] the medical profession, [illegible] Charge against a medical man, 1163, 1825—Sale of poisons and patent medicines, 1388—Women's Hospital, Sydney, 1388—Infantile hygiene, 1825—Royal Prince Alfred Hospital, 1825—Sydney Hospital for Sick Children, 1825—Melbourne Hospital, 1825
[illegible]
Avebury, Lord, and the proposed legal short- [illegible]
[illegible]

B

Baber, Dr. E. Cresswell, laryngoscopic lamp, 374
Babinski, M., lumbar puncture in diseases of the ear, 128; in the treatment of urinary [illegible] those tem-
[illegible] W. Kilmer)
[illegible] H. Firth),
[illegible] (Dr.
[illegible] ear
[illegible] sed ether [illegible] 1002; a
[illegible] Meal Poke
[illegible] sanita-
[illegible] rkland)
[illegible] tion of,
Baldwin, Mr. F. A., a tropical clinical thermometer, 303
Baldwin, Dr. W. W., Salsomaggiore and its baths, 671
Balfour, Mr. A. J. (the Prime Minister), health of, 4[illegible]2
Ball, Dr. J. B., depressed bridge of the nose and the use of paraffin, 805; melanotic sarcoma of the soft palate, 1128
Ball, Sir Charles, a new appointment for, 1540
Ballachulish quarriers and Dr. Lachlan Grant, 247, 615
[illegible]; the
[illegible] gical conditions, [illegible]
Ballinasloe District Lunatic Asylum, 1084, 1247, 1373, 1393, 1544, 1763
Balmain Friendly Societies' Dispensary, 200, 619, 1088, 1388
[illegible] 877
Banks and their Customers (Mr. Henry Warren) (review), 584
Banks, Sir William M., modern surgery of the prostate, 300
Banti's disease, 1557
Bar, calls to the, 1245; studying for the, 1368 (see also Barrister)
Barbados, dental surgeon to the Governor of, 551

Bungarus fasciatus (Banded Krait), some observations on the Poison of the (Capt. George Lamb, I.M.S.) (review), 877
Bunsen Gesellschaft, 1520
Burdett, Sir Henry, Burdett's Hospitals and Charities, 1904 (review), 1286
Burgess, Mr. A. H., rectal prolapse and incontinence of fæces treated by the submucous injection of paraffin, 440
Burgoyne, Burbidges and Co., a repudiation, 335
Burma, vaccination in, 1672
Burn, a peculiar, 304
Burn-Murdoch, Dr. T. M., exhibition of cases, 1504
Burnet, Dr. James, veronal, dangers of tablets, 335
Burning from the x rays (Mr. H. Lyle), 1536
Burns, the treatment of by picric acid and consequent poisoning, 247; deaths from, 1317
Burroughs, Wellcome and Co. and the "tabloid" trade mark, 951, 1013
Burrow, Dr. Vincent, 732
Burrows, Mr. Harold, enlarged liver and spleen, 936
Bushnell, Dr. F., malignant growths, 396, 463, 752; health factor in education, 477; pancreatic reaction, 1685
Butcher, failure of proceedings against a, 1539
Butchers, a peculiar skin disease in, 199
Butler-Hogan, Dr. J. F., and the schools of the Drapers' Company at Tottenham, 444
Butlin, Mr. H. T., epithelioma of the cricoid plate and of the œsophagus, 302; and the institute of medical sciences, 604
Butter, adulteration of, 1622
Butterworth, Dr. R, renal abnormality, 1651
Buxton, Dr. Dudley W., Vernon-Harcourt inhaler and exact percentage vapours of chloroform in surgical anæsthesia, 805
Buzzard, Dr. E. F., dermoid in the brain, 96; tinnitus, 936
Byers, Prof. John W., glandular fever, 84; midwifery nurses, 524; presentation to, 892; gastric ulcer, 1125

C

Cab fare of a hospital patient, 1395
Cæcal concretions (Dr. A. Forsyth), 502
Cæsarean section, 76, 234, 366, 1725
Cæsars, the court of the, two Greek physicians at, 1222
Caird, Mr. F. M., acute appendicitis, 302
C[illegible]ovements in, 265; the [illegible] 255
[illegible] York, 341, 444
[illegible] "n" rays, 611
[illegible]ncerning, 467; Practitioner (review), 1062; new water-supply scheme for, 1460
Caldwell, Mr. E. W., Roentgen Rays in Therapeutics and Diagnosis (review), 999
Caledonian Medical Journal (review), 1062
Caley, Dr. H. A., Raynaud's disease, 656; asthma, 1057; abdominal cyst, 1057
Callendar electric recorder, and platinum thermometer, 585
Callender, Dr. D. M., borderlands of gynæcology, 370
Calmette, Dr. Albert, and the Academy of Sciences, 835; antivenomous sera, 1386
Calomel, the hypodermic injection of: tribute to its discoverer, 1297
Calomel and opium "tabloid," 1731
Calwell, Dr. W., observations on 193 cases of gastric ulcer, 1125
Cambridge, Duke of, death of the 824, 884
Cambridge, the Royal visit to, 674; an interesting demonstration at, before the King and Queen, 825
Cambridge University: graduation, 62, 266, 405, 547, 692, 766, 837, 1315, 1390, 1467, 1617, 1694, 1762, 1827; new buildings of, 319; opening of new schools, 456, 547, 599, 664, 674; diploma in tropical medicine, 523, 535, 622, 1243; Norrisian divinity prize, 622; appointment of examiners, 1243; diploma in public health, 1243
Cameron, Dr. John, the superior commissure, 1213; and the Royal Southern Hospital Nursing Institution, 1238
Cameron, Dr. J. Spottiswoode, sophistication of foods, notice of discussion on, 45, 162
Cameron, Prof. Murdoch, mesenteric cyst, 1573
Cammidge, Dr. P. J, chemistry of the urine in diseases of the pancreas, 782, 1459, 1750
Campbell, Dr. Alfred W., 741
Campbell, Dr. Archibald, improved couch for the consulting room, 879
Campbell, Dr. C. M., paralysis agitans, 510
Campbell, Dr. Harry, lung reflex of Abrams, 52, 189
Campbell, Dr. H. J, causation of cancer, 658, 873
Campbell, Dr. Robert, hernia in infants and children, 88
Campbell, Dr. Robert B., a new appointment for, 544
Campbell, Mr. Colin, seton in Menière's disease, 757; tuberculosis of the mouth and pharynx treated with radium, 872
Camphor produced synthetically, 525

CANADA, CORRESPONDENCE FROM.—Changes in the Ontario board of health, 617—Vital statistics of Ontario, 617—Prevention of tuberculosis, 617—Royal Victoria Hospital, Montreal, 617—National Sanatorium Association, 618—Death of Dr. John Herbert Sangster, 618—Western General Hospital, Montreal, 618—Protestant Hospital for the Insane, [illegible] ciation, [illegible] urgical Society, 902—Montreal General Hospital, 902, 1761—Ontario board of health, 902—Conference on school hygiene, 902—A trial of Dr. Marmorek's antituberculous serum in Montre[illegible]—Raising [illegible]ulation, [illegible]rsity medical faculty, 902—Sanatorium in Nova Scotia, 1760—Canadian Association for the Prevention of Consumption, &c., 1760—Provincial sanatoriums, 1760—Medical institute for Toronto, 1760—Reporting births in Montreal, 1761—Making medical men by Act of Parliament in Quebec, 1761—Methodist Hospital for Toronto, 1761

Canadian Medical Association, 618, 1760
Canadians engaged by the Japanese Government for the war, 1081
Canals, Gartner's, 1527
Canals, the semicircular, removal of, in a case of unilateral aural vertigo (Mr. R. Lake), 1567
Cancer (see also Malignant)
Cancer, mammary, treated by oöphorectomy, 145; treatment of, by operation, 699; research and teaching in biology, 317; in what does it consist? 333; treatment of, by radium, in New York, 342; at the Cancer Hospital, London, 1046; and alvus adstricta, 345; some new discoveries respecting (Prof. J. B. Farmer), 369; a specific treatment for (Dr. G. Cooke Adams , 422, 498; treated by x rays, 440; biological and comparative aspects of, 448; in India, 478, 549; moot points in (Sir J. Halliday Croom), 615; causation of (Dr. H. J. Campbell), 658, 873; Dr. Schmidt's treatment of, 684; Cardiac dulness in cases of (Dr. W. Gordon), 724, 986; treatment of (M. Doyen), 762; and frozen meat, 839; of the uterus coexisting with pregnancy, hysterectomy for, 866; parasites (Dr. V. H. W. Wingrave), 874; and the dangers of radio therapeutic applications, 931; "corset" (Mr. R. Clement Lucas), 929; and neurotic heredity (Dr. James Shaw), 958; of the skin, treatment of, by the x rays, 1085; of the bladder (Mr. F. T. Paul), 1208; of the breast, inoperable, oöphorectomy in, 1241, 1380, 1653; Roentgen rays in the treatment of, 1426; gastric, 1488; mortality in France, 1758; another quack cure for ("Bramarsandt"), 1765; and amber, 1766; and arthritism (Dr. W. Roger Williams), 1820
Cancer and Pre cancerous Changes (review), 165
Cancer research in London, 415, 1144; in Liverpool, 1383
Cancer, the significance of the zoological distribution, the nature of the mitoses, and the transmissibility of (Dr. E. F. Bashford and Dr. J A. Murray), 413
Canine Defence League (civil war), 66
Cant, Mr. W. E, trichiasis, 1355
Canteen, abolition of, in the United States army, 131
Cantharides, poisoning by, 1427
Cantlie, Mr. J., bacteriological findings in a case of climatic bubo, 1123
Caplain, M., water-supply of Paris, 901
Carbolic poisoning in an infant (Dr. Louis E. Stevenson , 1279
Carbon dioxide baths, 1691
Carbon monoxide poisoning from coal gas and water gas, 614, 938, 1427
Carbon monoxide poisoning by the inhalation of cigarette smoke, 395
Carcinoma: of the duodenum, 148; etiology of, 226; of the œsophagus, treated by radium rays, 403; a case of, probably originating in retained testis, 989; of the œsophagus, 1124; treatment of, by the Roentgen rays, 1235; of the male breast, 1493
Cardew, Mr. H. B., obituary, 201
Cardiac and arterio-sclerotic sequelæ of typhoid fever, 887
Cardiac diagnosis, some points in (Dr. Hugh Maclean), 544
Cardiac dropsy in mitral stenosis (Dr. J. E. H. Sawyer), 187
Cardiac dulness in cases of cancer (Dr. W. Gordon , 724, 986
Cardiac failure, the efficient treatment of, 291
Cardiac sounds (Mr. W. J. C. Keats), 1721
Cardiac therapeutics, the present position of Prof. J A. Lindsay), 803
Cardiff: Small-pox Hospital, 127; the Midwives Act in, 338, 899; annual meeting of the Medical Society, 400; *infirmary report*, 543; changes in the staff, 1756; "Infirmary *Sunday*," *1674*; *small pox in*, *760*, *1539*; report of the medical officer of health of, *1078*; *Seamen's Hospital*, *1464*; *proceedings* against a butcher, 1539; scarlet fever isolation, 1539
Care of Infants (Dr. Sophia Jex-Blake) (review), 584
Caries of the middle dorsal vertebræ, a case of total paraplegia due to, 505
Carmarthen Asylum, 1312
Carmichael prize essay, 900
Carotids, the External, Excision of, Treatment of Certain Malignant Growths by (review), 877
Carpenter, Dr. George, myocarditis, 726
Carr, Dr. J. C., traumatic hæmatorrhachis, 670
Carrier pigeons, the employment of, by medical men, 842
Carstairs, Dr. J. G., death of, at Geelong, Victoria, 765
Carter, Mr. R. Brudenell, astigmatism and "eyestrain," 832; physiology in education, 884; Doctors (review), 164
Carter, Dr., digestants, 1281
Carter, Dr. W., malarial fever, 579
Carts, two-wheeled, brakes for, 820
Carwardine, Mr. T., triple telescopic intussusception, 505
Case for diagnosis (Dr. W. Johnson Smyth), 1276; (Mr. W. H. Haw), 1698
Casey, Dr. Edward, 123
Casper, Dr. Leopold, Functional Diagnosis of Kidney Disease (review), 1357
Cassel Fund Travelling Ophthalmic Hospital in Egypt, 1010, 1241
Caste prejudices in India, 1614
Cast-oils and cod-oils, 1063
Castoreum bromide, 812
Cat story ("cat electricity causes catastrophe"), 551
Cathoire, M., a new parasite, 1021
Caton, Dr. Richard, Harveian Oration, 1084, 1372, 1769
Cattle plague in Egypt, 266, 1161
Caul, a child's, advertisement of, 906
Cautery, hot-air, 437
Cautley, Dr. E., stenosis of the pylorus, 645; multiple congenital deformities, 996; cerebral syphilis, 1205
Cavazzani, Dr. Giulio, garlic and tuberculous diseases, 90
Cavernous sinus, thrombosis of, 889
Cayley, Henry, Deputy Surgeon-General, I.M.S., C.M.G., retired, death of, 894; obituary, 964
Cazalis, M., and protective measures for the health of the French nation, 341
Celluloid collars, dangers of, 1239
Census of India, 1901 (review), 1606
Census, proposed, in 1906, 812
Centenarians, 133, 202, 343, 575, 965, 1091, 1583, 1619, 1694, 1766
Centenary of the Royal London Ophthalmic Hospital, 244; of the Russian Medical Council, 1197
Central control of the London hospitals, 125, 254, 333
C[illegible] 25, 477, 692, [illegible]ry training, [illegible]se nursing, 452; and the training of midwives, 457; and the Rotunda Hospital, Dublin, 477, 692; and Dr. W. J. Sinclair's criticisms, 1587
Central Midwives Board and the Royal College of Surgeons of England, 535
Central Poor-law conference and vagrancy, 668
Cerebellar disease, a case of, with unusual features, 434
Cerebral abscess, unusual case of, 428; recovery after operation for, 439; late traumatic, 632
Cerebral affections, stereognosis as a localising factor in, 1295
Cerebral form of amyotrophic lateral sclerosis, 246
Cerebral injury, severe, prophylactic use of morphia in cases of, 1785
Cerebral symptoms after absorption of dropsy, 735
Cerebral tumours, surgery of, 379
Cerebro spinal fluid, the study of, 596; escape of, from the nose and ear, 1038
Certant, Dr. M. de, *obstructive laryngitis in* measles, 1810

INDEX TO VOLUME I., 1904.

Certificates, medical, and school authorities, 1091

[illegible]

176

Cervical sympathetic ganglion, resection of, for glaucoma, 740

Cervix, epithelioma of, 97; fibroids, 931

Certan, Dr R, pituitary body, 453

Chaffey, Dr W C, extreme wasting, 433

Chair, sanatorium, a new, 1134

Chamberlain, Rt Hon. J, M P, dinners to 1445, 1742

Chancre of the lip, 165

Channell, Mr Justice, and antivaccinationist guardians, 1221

Chantemesse, Dr., a new appointment for, 263

Chapman, Dr. C. W., dilatation of the heart, 996

Chapman, Dr. P. M, chloroform anæsthesia by Dubois's apparatus, 153

Chapman, Mr John E, economic treatment of the sanatorium treatment for the working classes, 1201

Chaput, M., local cocaine anæsthesia in abdominal operations, 1313

Charges against medical men in Australia, 1163, 1825

Charing Cross Hospital and Dr T H Green prize, 112; donations to the hospital, 133

Charming away of warts, 842, 906

Charpentier, Dr. A, tetanus, 1722

Charpentier, M Augustin, *references to the* muscle and nerve rays of, 526, 594, 610, 685

Charts, temperature, continuous clinical, 585, 684, 1305; emergency pocket case book, 1766

[illegible] 590

[illegible] *ings*, 1085

[illegible] M Pattison

[illegible] of the pan

[illegible] Milroy and

[illegible] W. Webster

[illegible] Pathological

[illegible]

Chemulpo, fight at, a British officer's report on the, 1081

Chesnaye, George Cochet, Surgeon Colonel, I M S, *obituary*, 1243

[illegible]

Chicken pox, notification of, at Birmingham, 759; as a notifiable disease, 885; and the London County Council, 1011

Childhood, deaths in (Dr. W Williams), 1701, 1772

Childhood, the study of, 666; the "painful pronation" of, 820

Childhood Society, 1299

Children (see also Baby, Boy, Fœtus, Girl, Infant, [illegible] the Young) [illegible] neglected, [illegible] physical con[illegible] tenement, [illegible] upon, 1621, *from elementary schools, physical examination of*, 1157; *street trading by*, in Dublin, 1240; causes of cough in, 1191; physical exercises for, 1513; pauper, care of, 1695, 1829

Children, school, defective, in Berlin, 963; myopia of, 1073; over-pressure of, 1073; stuttering of, 1073; diseases of the teeth of, 1073, 1157; mental capacity of, 1073; gymnastics for, 1074; desks for, 1074; baths for, 1074; physical [illegible] nourish[illegible] 167, 1091, [illegible]

Children's Diseases, British Journal of, 1434

Childs, Dr. C, cholera and the water supply, 937

Chinese labour in South Africa and the plague, 966, 1393

Chinese medicine, 1147; remedy for hydrophobia, 1541; story of a physician, 1545; plague and other diseases, 1735; and Western obstetrics, 1766

Chirurgical knowledge, the culture of, in 1826 (Mr. William [illegible]

[illegible] feeding, 1551

Chloral poisoning at Portsmouth Lunatic Asylum, 663

Chloretone in sea sickness, 253, 334, 399, 465, 539, 833

"Chloridated" diet, 254

Chloride of ethyl inhaler, a new (Mr. J Maxwell Wood), 1733

[illegible] 762

[illegible] ratus, 155

Chloroform and oxygen [illegible] vapours of, in surgical anæsthesia, 805; poisoning, 1657; decomposition of, 1769

Chloroma, 1641

[illegible]

Chocolate, milk food, "Allenburys," 373

Chocolate, pure granulated, 35

Cholecystitis, acute traumatic, a case of, 220, 346

Cholecystotomy for acute post-enteric in[illegible]

[illegible] 1313

Chondrodystrophia fœtalis, 1369

Choquet, M. J, Anatomie Dentaire (review), 307

Chorea, tapeworm as a cause of (Mr H Tener *Galbraith*), *1348*

Choroid, tuberculosis of, 368

Christian Science and Mr W T W Wilding, 1025

[illegible] ophied

[illegible] W B

[illegible] 1357

[illegible] Phari ("The

[illegible] and Mental

Church, Sir William S, infectivity of the tubercle bacillus, 823; ambulance provision in London, 1302; Oliver-Sharpey lectures, 1536

Church Missionary Society, 1224

[illegible] *of*, carbon

[illegible] cture, 374, [illegible]

Circular travel ticket for London students, 770

Circulation, the views of the ancient Egyptians on, 1769

Circulatory apparatus in general paralysis of the insane, 1062

City of London Asylum, Dartford, 1077

City of London Hospital for *Diseases of the Chest, festival dinner of*, 1224, 1468

Civic grant to the University of Liverpool, 543

Civil service examinations for medical clerks, 691

Civil surgeons and medals, 346, 1633; pay of, 1818

Clacton-on-Sea, sunshine of, 1520

Clapham, Miss L B (M B), post-anæsthetic coma, 806

Clare, Mr. John, Hanley, health report for 1903, 1463

Clark, Mr W. G. (1) interscapulo-thoracic amputation; (2) a case of Cæsarean section, 366

Clarke, Dr Thomas (J P.), presentation to, 960

Clarke, Mr Ernest, chlorosis, 1198

Clarke, Mr. G Fernandez M, veronal poisoning, 223

Clarke, Mr J Jackson [illegible] maxillary [illegible] case, 72[illegible] plegia, 12[illegible]

Clarke, Mr. [illegible] Hospital (review), 16[illegible]4

Clarke, Mr W. E, Cusack's Biology (review), 372

Classification of paupers, the need for, 43

Classification of the insanities, as a basis for the theory of criminal responsibility, 739

Clavicle, dislocation of the, an unusual case of (Mr A. C. Bird), 794; fracture of the (Mr. R T. [illegible]), 1201

Claybury Asylum report, 746

Clayton-Greene, Mr W. H., hernia cerebri, 606; influence of early operation upon the mortality and results of acute appendicitis, 1353

Cleland, Dr J. Burton, so-called pancreatic [illegible] 451 [illegible] Con[illegible] and) (review), 442

[illegible] oners and

Clouston, Dr. T. S, prodromata of the Psychoses, 1141

Club foot, congenital (Mr. E Laming Evans), 806

Club practice, medicine, 481, 552, 695, 1765; minor surgery in, 1395

[illegible]

Cobden, Richard, and Thomas Wakley, 1697

Cobra (Indian) poison (Capt. G Lamb, I M.S, *and Dr W K Hunter*, 2), (*Major R H. Elliot*, I M S), 715

Cobra venom, precipitin of (Capt. George Lamb, I M S), 916

Cocaine, morphia, and opium habits, increase [illegible]

[illegible] jections of, 1552

[illegible]

Codman, Dr E A, fractures, 1682

Cod-oils and cast oils, 1063

Coghlan, Mr, declining birth rate in Australia, 13[illegible]

Coghlan, Mr Edward Francis, pneumothorax, 1552

Cohen, Dr Solomon Solis, Physiologic Therapeutics, vol x, 441; vol viii, 1210

Cohn, Professor, ophthalmic surgeon and school hygiene, 1072

Coins, dirty, 261, 431; and dirty paper money, 1013

[illegible]

Robinson), 1118; muco-membranous, and its treatment, 1150, 1223

Collie, Lt-Col, I.M S, enlarged spleen, 1285

Collier, Mr Mayo, latent or intermittent nasal obstruction, 429

Colliery surgeons, remuneration of, 127

Colliery work as a board school subject, 400

Collingridge, Dr W., restaurant kitchens and bakehouses of the City, 744; "bread and butter," 1807

Collingwood, Mr. F W, the old hardship of London medical students, 1[illegible]93

Collins, Sir W J, cancer, 333

"Colmo" disinfection, 407

[illegible] 549

Colour test appliance (Mr Percy Dunn), 1133

Coloured light and the eyeball of the frog, 1061

Coma, a case of, apparently due to distension of the bladder, 432

Dispensary medical officers' fees in Ireland, payment of, 340, 1758; and the cancellation of tickets, 1021; and the way they are treated, 1160, 1616
Dispensing and C[illegible] Easy (Lt H. H. Scott [illegible] 10
Dispensing and [illegible] practice (Dr. B. G. Morison), 10[illegible]8
Dispensing Made Easy (Dr. W. G. Sutherland) (review), 729
Dispensing of medicines and the medical profession, 243, 251, 332, 392, 463, 539, 6[illegible]8, 665, 636, 1008, 17[illegible]9
Dispensing Practice, Elementary (Mr. Joseph Ince) (review), 372
Distomum Cirrigerum v. Baer, 33
Distribution of bacillus coli in nature (Dr. J. W. H. Eyre), 648
District Nurse, The (a book entitled), query respecting, 9[illegible]6
Dixey, Mr. W. A., and sight testing by opticians, 240
Dixon, Dr. Henry Horace, an appointment for, 1160
Dixon, Dr. W. E., action of drugs on the pulmonary vessels, 163
Dixon-Hartland, Sir Frederick, and the registration of nurses, 622
Dobell, Dr. Horace, gift to the Royal College of, Physicians of London, 378
Dobson, Mr. J. F., Utero-lithotomy, 358
Dockyard employés and infectious diseases, 473
"Doctor, all for the dear," 595
Doctor, the (the well-known picture) 66
"Doctors and friendly societies" (Mr. W. J. Galloway, M.P.), 338
Doctors and their Work review), 164
"Doctor's bill" of the year 1697, 522; of the year, 1806, 551
Dodd, Mr. J. Theodore, the causes of high infantile mortality, 334, 686
Dogs, excreta of, and the footpaths, 520; vivisection of, 1170; *experiments on*, 1247; inoculation of, 1393 (see also Animals)
Donald, Dr. A., *endometritis and metritis in virgins*, 303; "idiopathic endometritis," 512
Donald, Dr. W., obituary, 404
Donald, Mr. Robert, Municipal Year book of the United Kingdom for 1904 (review), 942
Donations and bequests (see Hospitals)
Donnan, Dr. W. D., and the Belfast board of guardians, 1160, 1616, 17[illegible]8
"Doodle dashers" at Torquay, 136
Door mat, shaking of the, 1139; the Lathina, 1832
Doran, Mr. Alban H. G., and the Journal of Obstetrics and Gynæcology of the British Empire, 823; diseases of the Fallopian tubes and twisted *pedicles*, 1058; *hæmatoma and hæmatocele*, 1353
Dore, Dr. S. E., eight cases of lupus treated by the Finsen light and the x rays, 874
Dorset County Museum, the late curator of (Mr. H. J. Moule), 900
Douglas, Mr L. M., Refrigeration in the Dairy (review), 1731
Dove, Dr. J. B. B., obituary, 836
Dowden, Mr. J. W., treatment of shock, 236
Down Brothers, vaginal douche, 66
Down County Infirmary, 545
Downie, Dr. J. Walker, coal in the trachea of an infant, 155; suppurative affections of the accessory sinuses of the nose, 580
Dowsing radiant heat and light treatment, 551
Doyen, M., treatment of cancer, 762
Doyne, Mr. R. W., trichiasis, 1355; septic conjunctivitis, 1536
Drapers' Company's schools at Tottenham and inspection by the medical officers of health, 444
Dreams and temperature, 695
Dreschfeld, Dr. J., primary sarcoma of the liver, 1429
Dresden, Mr. Edmond, bequests to various hospitals, 477
Dressing, First, on the Battlefield (Col. Nicholas Senn) (review), 882
Drink cures, 130
Drinking vessel, the choice of a, 819
Drogheda, alleged scandal at, 1764
Droitwich brine crystals, 730; brine baths, radio activity a property of, 1010
Dropsy, cerebral symptoms after absorption of, 735
Drouet Institute (Dakhyl v. Labouchere), 818, 891
Drowning, apparent, resuscitations after, 1005
Drug habit in the United States, 311
Drugging, self-, 914
Drugs, actions of, on the pulmonary vessels, 163; dangerous, the unrestricted sale of, 252; public sale of, in New York, 403; some new, a critical trial of, 594; cumulative action of, 1004; exhibition of, 1526; nascent state and properties of, 1540; adulteration of, in the year 1826, 18[illegible]1; (dispensing of, see Dispensing)
Drugs, some experiments upon, which are said to increase the number of leucocytes in the blood, 1208
Drugs: their Production, Preparation, and Properties (Mr. H. Wippell Gadd) (review), 1358; respect for, 1751
Drysdale, Dr. J. H., anæmia pseudo-leukæmica infantum, 433
Dublin: Trinity College, pass-list, 62, 343, 476, 547, 1391, 1542, 1762; Trinity College, the Provostship of, 401, 901, 1160; a degree in dentistry at, 690; chair of botany, 1160; tenement houses of, 59; Royal College of Science, 59; housing of the poor in, 103; a guardians' meeting, 269; revaccination in, 340; City Hospital for Diseases of the Skin, 340; Rotunda Hospital and the Central Midwives Board, 449, 457; County Infirmary, finances of, 623; private entrée at Dublin Castle, 761; public health of, 761, 1240; Sanitary Association, 900, 1239, 1691; National Children's Hospital, 1466; Rotunda Hospital, 1691; Jervis Street Hospital, 1691; Irish Medical Association, meeting in, 1757
Dublin Journal of Medical Science (review), 1731
Dubois's apparatus, chloroform anæsthesia by, 153
Duckworth, Sir Dyce, pneumococcal peritonitis, 159; medical examinations for life assurance, 355; *British winter resort*, 1523
Duclaux, M., death of, 1386; obituary, 1467
Dudfield, Dr. R., control of measles, 1058
Dudfield, Dr. T. Orme, 252
Dudgeon, Mr. L. S., emphysematous gangrene, 226; *examination of the blood for leucocytosis*, 1[illegible]52
Dudley, Guest Hospital, 471
Duellists' precaution, 66
Dufferin Fund, 1153
Duke, Dr. Edgar, pneumonia in early life, 1016
Duke of Cambridge, the late, 824, 884
Dukes, Dr. Clement, infectious diseases, 253; organisation of physical education, 1157; *removal of the ovaries for inoperable cancer*, 1380; school hygiene, 1457
Dulness, cardiac, in cases of cancer, 986
"Dump," 135
Dun, Mr. R. C., congenital hydronephrosis, 163; volvulus of the small intestine, 1207; *strangulated inguinal hernia*, 1501
Dunbar, Dr. H. J., intussusception, 615
Duncan, Dr. William, rupture of a tubal pregnancy, 563, 581
Duncanson, Dr. J. Gray, suprarenal gland products, 369
Dundee Lunacy Board and the superintendent, 340
Dunlop, Mr. John, 253, 833
Dunn, *Mr. Percy, new colour-test* appliance, 1133
Duodenal ulcer, *perforated* (Dr. Alonzo G. Rider), 1425
Duodenum, carcinoma of, 148; acid medication of the, 762
Dupuy, Dr. J. Th., La Peste (review), 998; La *Fièvre Jaune (review)*, 998
Durham College of Medicine dinner, 477
Durham University, pass-list, 1244, 1467
Durness board and Dr. J. F. D. Macara, 177, 1764
Durno, Dr. Leslie, tonsillitis, 727
Dysentery, bacillary (Lt.-Col. R. H. Firth, R.A.M.C.), 800
Dysentery, the plurality of, 317

E

Ear, auricle of the, value of the, 1290
Ear disease, a case of bacillus pyocyaneus pyæmia following, 1124
Ear, Diseases of (Prof. E. B. Dench) (review), 370
Ear, diseases of, treatment by lumbar puncture, 128
Ear and Throat Hospital, Birmingham, annual meeting, 1463
Earl, Dr. H. C., teratoid tumour of the ovary, 726
Earlswood Asylum, 1804, 1819
Eason, Dr. H. L., persistent hyaloid artery, 801
East London Medical Society and the abuse of hospital charity, 1305, 1741
East London Nursing Society, 673
Easter eggs, 947
Easton, Mr Harold A., strangulation of the intestine, 296
Eating slowly and eating less, 318
Ebbinghaus, Dr. H., congenital heart disease, 1806
Eccles, Dr. W. McAdam, inguinal trusses, 6[illegible]8; lessons from a year's fatalities, 1506
Ecclesiastical Commissioners and King's College Hospital removal fund, 741
Eclampsia treated by the administration of chloroform, 793, 1017; recurring (Dr. Robert Jardine), 1[illegible]8[illegible]; with twins, 1380; Cæsarean section for, 17[illegible]5
Eclampsia, puerperal, nine cases of, 368; 41 cases of treated by thyroid extract, 1057
Ectopic (see also Tubal pregnancy)
Eczema, and hypnotism, 514; Dr. A. Whitfield's lectures on, 811; plants which induce, 1208
Eden, Dr T. W., 823; hydatids, 1657
Edgar, Dr. J. Clifton, The Practice of Obstetrics (review) 1728
[illegible]78
[illegible] e, 761
[illegible] of, 458, 1675
Edinburgh Royal Infirmary, the question of superannuation, 169 180; annual report, 197; court of contributors, 262; a quarter's deficit, 1694
[illegible]al Society, 615, 760
[illegible], 761
[illegible] ub of London, 1224
[illegible] Graduates' annual [illegible] Tyne, 548
Edinburgh University, rectorial address, 262, 339; pass list, 1168; general council, 1385; *Dr. Hope's lecture in the year 1826*, 1675
Edington, Mr. G. H., strangulation of the fully descended testicle, 1782
Edmunds, Mr. Walter, cancer treated by oöphorectomy, 1653
Education Act and physical fitness, 1003
Education authorities, school hygiene in its relation to, 1219
Education, elementary aims in (Mr. Hamilton Hall), 666
Education, French and English, in the year 1826, 954
Education, health factor in, 477
Education, medical, and science in boys' schools, 315; and Sir Donald Currie's gift *to University College, London*, 880; future of, in London, 1[illegible]99, 1435; and the General Medical Council, 1577; and the Royal College of Science, 1534; in India, 1821
Education, modern, the attitude of the profession towards (Dr. R. B McVittie), 6[illegible]6
Education, physiology in (Mr. R. Brudenell Carter), 884
Education, preliminary scientific, 1593
Education, University, in Ireland, 198, 263
Education of epileptic children, 1247
Education of town children in village schools, 290
Educational Commission, the Mosely, 1074
Edwards, Mr. *F. Swinford, prostate, 870;* urinary tuberculosis, 935
Edwards, Mr. John, acute yellow atrophy of the liver, 866
Edwards, Mr. R. T., unusual fracture of the clavicle, 1201
Effluvium nuisances, industrial, 1522
Eggs, artificial colouring of, 1444
Eggs, Easter, 947

EGYPT, CORRESPONDENCE FROM. — The Egyptian lunatic asylum, 130—Sanitary improvements in Cairo, 265—New Italian hospital, 265—Cattle plague, 266, 1161—Tourist season, 901—Anglo-American Hospital, 901—Sanatorium Al Hayat, Helouan, 901—Renewal of plague, 1087—Kasr-el-Ainy Hospital, 1087—Obituary notice, 1037—Cassel fund to fight ophthalmia, 1241

Eg[illegible] of, 597; Cassel Fund [illegible] hospital in, 1010, [illegible] nual report on, 1228, 1372; malaria in, 1372
Egyptian papyrus, an, 1582
Egyptians, medicine god of the (Dr. R. Caton), 1769
Ehler, Dr. Ferdinand, chronic pancreatitis, 454
Eighth nerve, attempt to divide, within the skull for the relief of tinnitus (Mr. Cuthbert S. Wallace and Mr. H. J. Marriage), 936, 1192; (Mr. R. H. Parry), 1726
Eisenmenger, Dr. Rudolf, apparatus for maintaining artificial respiration, 515
Ektogan, 35
El Gofio, the alimentary merits of, as a food, 739
[illegible] agents, 473
E[illegible] the West of [illegible] 0
Electric current, action of the, upon the nervous system, 1620
Electric light the gas bill and health), 887
Electric phenomena, exhibited at the Royal Society conversazione 1455
Electrical apparatus, a catalogue of, 1575
Electrical currents of high frequency (Dr Alexander Bruce), 725

[illegible]

Elementary aims in education (Mr. Hamilton Hall), 666

[illegible]

Ellis, H. M., Inspector-General of Hospitals and Fleets, 1748
Ellis, Mr. L. Erasmus, chloretone in sea-sickness, 466
[illegible] 442
[illegible] unds; enor [illegible]

Empyema, surgical treatment of (Mr. D. M. Greig), 511; frontal sinus (Dr. H. Tilley), [illegible]

[illegible]

Endothelioma of the peritoneum, 725; of the retina, 938
Enemata, nutrient, hot-water injections as a substitute for, in the treatment of gastric ulcer (Dr. W. Pasteur), 1418
England and Switzerland, sunshine of, compared, 1370, 1520, 1670
English, Mr. T. Crisp, after-effects of head [illegible]

[illegible]

Ensor, Dr. Edwin T., unfounded criminal charges against medical men, 894

[illegible]

1427

[illegible] in South [illegible] ration in, [illegible]

Enteric fever, Widal serum reaction in, 1357; heart and arteries in, 1612
Enteric (post), acute infection of the bile channels, cholecystotomy for, 570
Entero colostomy for obstinate constipation, 54, 124

[illegible] und, [illegible]

Epidemics and schools, 1247; and the German Red Cross Association, 1387
Epidemiological Society: Dr. Reincke on enteric fever and cholera in Hamburg, 741, [illegible]

[illegible]

Epileptics and Inebriates, Homes for, at Langho, 1756
Epileptics, treatment of, and the Government, 1247
Epileptiform neuralgia, intracranial resection of the second division of the fifth nerve for, 1044

[illegible]

Erskine, Dr James, hospital history of Glasgow, 939
Erysipelas, facial, from erosions of the nasal septum, 176; contagious nature of? 5c8; of leg, treated by antistreptococcic serum, 577
Erythromelalgia, a case of (Dr. Bruce C. Kelly), 154; cases of (Mr. F. Parkes Weber and Dr. James Galloway), 1203
Esher, Lord, second report of the committee of, 679
Estuaries, tidal, the pollution of, 742
Ether, a chemical conception of the, 591
Ether, anæsthesia by, the discovery of, 1387; [illegible]

[illegible]

Etiquette, [illegible] medical, [illegible]

[illegible]

the male, 939
Evans, Mr. Arthur, vermiform appendix ad- [illegible]

[illegible] ot, [illegible] g., [illegible]

Evans, Mr. Howell, extracranial and intracranial hæmorrhages in the newly born, 433
Evans, Mr. J. Jameson, neuro retinitis in chlorosis, 1345, 1610
Evelina Hospital for Sick Children and "Zunz bequest," 153

[illegible] muscular [illegible] ent, 1202; [illegible]

Ewing, Dr. James, Clinical Pathology of the Blood (review), 582
Examinations, medical, for life assurance, 355, 375

[illegible] t of [illegible] era-peutics, [illegible]

Experiments on animals, 624, 967, 1247
Extensor longus pollicis, rupture of the tendon of the, 455
External students of the University of London, 611
Extra Pharmacopœia of Martindale and West- [illegible]

[illegible]

Eye, traumatisms of the, during labour, 246; diseases of (Dr. H. P. Miller), 581, a worm in the, 1473; endogenous pneumococcic [illegible] he (Dr. W N. [illegible] 376, 755; and [illegible] Carter), 832; [illegible]

[illegible]

Eyre, Dr. J. W. H., distribution of bacillus coli in nature, 648; and the Scottish Accident, Life, and Fidelity Insurance Co., Ltd., 1811

F

Fabre, M., miner's anæmia, 1313
Face, tuberculosis affections of, 304
Facial erysipelas, 176
Facial palsy, as a family disease, 224
Facial paralysis following submaxillary abscess (Dr. J. C McWalter), 795
"Facile" food warmer, 100
Factories and workshops annual report of the chief inspector of, for 1902, 116; supplement to the report, 950
Factory Acts, and the cold weather, 388; alleged evasion of the, 1246
Factory Girls' Country Holiday Fund, 1093
Factory Surgeons, Association of, and the ventilation of factories, 176
Factory workers and their infants, 1691
Faculty of Medicine, Paris, disturbances at, 693
Fad, a praiseworthy, 318
Fæces, incontinence of, treated by injection of paraffin, 440, 716
Fairbank, Dr. A. W., neurotic œdema of hereditary origin, 1442
Fairbank, Mr. H. A. T., sarcomata of the alimentary canal, 1503

[illegible]

False accusation, a (against a medical man), 835
Far East, the crisis in the, 443; war in the, 691, 751, 957, 1016, 1081, 1150, 1204, 1304, 1377, 1458, 1534, 1609, 1683, 1749, 1819
Farie, Dr. G. J., submucous fibroid of the cervix uteri, 304
Farmer, Professor J B, cancer, 187, 251, 369; heterotype divisions in animals and plants, 1815
Farquharson, Dr. R., registration of nurses, 549, 622, 671
Farrant, Mr. Mark, report on St. Thomas's [illegible]

[illegible] Frederic [illegible] (review), [illegible]

Farrow, Mr. Thomas, cheap credit v. usury, 969
Fashion papers and medical advice, 407
Fasting in therapeutics (Dr. John Haddon), 1347
Fat boy of Peckham, 106, 270

[illegible]

Fee, the proper? (Convent home for the reception of epileptic children), 770

[illegible]

Fehrsen, Dr. Alexander O M., hæmoglobin and corpuscular content of the blood of the newborn, 34

[illegible] of [illegible]

Fenwick, Mr. E. Hurry, early urinary tuberculosis, 935
Fernley observatory, Southport, 1469
Ferrand, Lt.-Col. Edward, I.M.S., death of, 694
Ferrier, Mr. William Heatlie, the late, 1540
"Ferrubron" paint, 730
[illegible] 1612

[illegible] cky [illegible] tas [illegible] vix [illegible] dy

Fibro-myoma of the bulbar conjunctiva (Mr. Kenneth Scott), 1196
Fibro-myoma of the intra-abdominal portion of the round ligament of the uterus, 227
Fibro myoma of the uterus with carcinoma (Dr. W. W. H. Tate), 1057
Fibro-myoma uteri treated by abdominal hysterectomy, 875
Fibro myoma, uterine, a large, removed from a patient post mortem (Dr. Alfred Brown), 868
Fibro myoma, uterine, sloughing of the central part of, shortly after delivery (Mr. John D. Malcolm), 933
Fibro-myoma, sarcomatous (Dr. P. Horrocks), 1353
Fibro-myomata, malignant uterine complications of, 1428
Fibula, congenital absence of the (Mr. E. Laming Evans), 1206
Fiddian Dr. B. G., "spontaneous fracture" of the femur, 1197
Fièvre Jaune, La (Dr. J. Th. Dupuy) (review), 998
Fifteenth International Congress of Medicine, 1521, 1586
Fifth cervical nerve, union of the, with the superior cervical ganglion, 1002
Fifth nerve, second division of the, intracranial resection of, for epileptiform neuralgia (Mr J. Hutchinson, jun.), 1044
Filaria perstans, the so-called, note on the probable mode of infection by, 286, 643
Filaria perstans and the suggestion that it belongs to the genus Tylenchus (Bastian), 420, 752
Filters, bacterial and septic tanks, germicidal effect of, 1449
"Filthiest town on earth," 1025
"Filthy lucre," 381, 481
Fin rays of fishes (Mr. Edwin S. Goodrich), 1214
Finchley, outbreak of disease at, due to milk, 839
Findlay, Dr. A., The Phase Rule and its Applications (review), 729
Findlay, Dr. J. W., alcohol in medicine, 1059; chronic lymphatic leukæmia, 1429
Findlay, Dr. W., the death of, 1160
Finger-prints by physiotype, 1815
Fink, Major G. H., Cancer (review), 165
Finlay, Dr Carlos F., and yellow fever, 453
Finlay, Prof. D. W., pyo pneumothorax, 1572
Finsen light for cutaneous disease, 161; in the treatment of lupus, 573, 874
Finucane, Mr M. I., an appointment for, 9
Fire, preservation of antiquities from, 173; prevention of, at Eton, 827
Fire-walking in the Fiji islands, 1474
First Dressing on the Battlefield (Col. Nicholas Senn) (review), 582
Firth, Lt.-Col. R. H., R.A.M.C., scurvy, 657; bacillary dysentery, 800; enteric fever in India, 937
Fischer, Dr. Louis, Infant Feeding (review), 1431
Fish (see also Shell-fish)
Fish and "brain food," 373
Fish and leprosy (Dr. George Turner), 595
Fish, bad, for Good Friday, 1159
Fish food, fallacies about, 451
Fish oil, substitution of, for cod-liver oil, 1300, 1379
Fish oils and preserved fish, 1219
Fisher, Dr. T. Carson, impure air of churches, 1751
Fisher, Mr. J. Herbert, Ophthalmological Anatomy (review), 1509
Fison, Dr E. T., acute hæmorrhagic pancreatitis, 559
Flannelette and fire, 481
Flat foot, treatment of, 1025
Fletcher Dr. George, 622
Fletcher, Dr. H. N., nervous symptoms, 615
Fletcher, Mr. Robert Vicars, obituary, 132
Flexion of the thighs after abdominal operations, a rest for 1064
Flogging a boy, 1317 (see also Corporal punishment)
Flowering Plants and Ferns (Mr. J. C. Willis) (review), 1612
Fluid intake, in morbid conditions, 30
Fluorescent substances, some, "photodynamic" action of, 1613
Flux, Dr. G. B., post-anæsthetic coma, 806
Fœtus, an abnormal, 1474
Fœtus, congenital deformity in the (Dr. H. Cripps Lawrence and Mr. C. Braine-Hartnell), 1424
[illegible] Medical Society, 202; Public Health [illegible] ate scandal, 1688, 1752 [illegible] of food; also infants' and invalids')
Food and drugs, (see also Sale of Food and Drugs Act)
Food adulteration in Birmingham, 1310
Food for the Tropics (Mr. T. M. Macknight) (review), 811
Food in warm climates, 739
Food, nutrient (Savore), 1732
Food, Preservation of and Disinfection (Dr. Samuel Rideal) (review), 728
Food, preservatives in, 122, 162, 199, 399, 618, 764
Food standard, United States, 61
Food-supplies, measures for the better control of our, 1067
Food-warmer, the "Facile," 100
Foods, artificial, for infants, 1237; predigested, 1832
Foods, Protene, 730
Foods, exhibition of some, 1526
Foodstuffs, colouring of, 327
Foodstuffs, purin bodies of (Dr. I. W. Hall) (review), 442
"Foot drafts," 1384
Foot, gangrene of, occurring in the newly born, 575
Foot or body warmer, electric, 100
Football, the dangers of, 691, 1246
Footpaths and roadways, the cleansing of, 520
Foott, Mr. F. W., rupture of the left auricle, 152
Forbes, Dr. J. G., primary sarcoma of the liver in an infant, 1503
Forceps and sponges left in the abdominal cavity, 1356, 1684 1751
Forceps, entropium, 309; for the removal of stitches, 1800
Ford-Palliser drinking tank, 1586
Foreign bodies, homicide by the introduction of, 581; impacted in the left bronchus, 795; new instrument for the removal of, from the nose, 1002; swallowed, method of treatment in cases of, 1281; in the walls of the heart, 1392; in the œsophagus, 1428, 1824; radiography of, 1691
Foreign University Intelligence, see under University
Foresters' homes, 1158
Forethought, an excess of, 461
Formalin in milk, 613
Formolyptol 1361
Formulæ, medical, from an Egyptian papyrus, 1582
Forneau, M., a new local anæsthetic, 1085
Forshaw, C. F. ("ophthalmic optician"), 1545
Forsyth, Dr. A., cæcal concretions, 502
Foster, Sir Michael, ventilation, 1317; English Lunacy Commission, 1471
Fothergill, Dr. W. E., pathology of "habitual" and incomplete abortion, 1231
Four Epochs of Woman's Life (Dr. Anna M. Galbraith) (review), 729
Fowler, Dr. J. Kingston, sanatorium treatment, 1202
Fowler, Dr. J. Stewart, exhibition of cases, 1605
Fowler, the Rev. Montague, 1171
Fowler's solution horny patches on the knees and elbows following the taking of, 876
Fox, Dr. L Webster, Diseases of the Eye (review), 1130
Fox, Mr. J. Tregelles, mechanism of the alimentary canal, 1207
Fracture, a compound, of the humerus, anthrax infection of (Mr. Peter Paterson), 1122
Fracture, longitudinal, of the tibia, 504
Fracture of the base of the skull, diagnosis of, 1224, 1235
Fracture of the clavicle, unusual (Mr. R. T. Edwards) 1201
Fracture of the scaphoid bone, 1582
Fracture of the skull by contre-coup (Mr. Angus E Kennedy), 1053
Fr[illegible] the femur, 1197
Fr[illegible]
Fractures of the lower extremity, ambulatory treatment of, by Hoefftcke's modified Hessing's splint-case appliance, 710
Fractures of the skull (Mr. L. B. Rawling), 973, 1034, 1097
Fraenkel, Prof. Joseph, cytodiagnosis, 596
France, Mr. Charles F., presentation to, 620
France (see also FRENCH, PARIS, CORRESPONDENCE FROM)
France, vaccination in, triple compulsory, 194, 398; population question in, 888; infant feeding in, 1220
Francis Dr. Alexander, Asthma in Relation to the Nose (review), 512
Francombe's "warm-air" slow combustion grate, 530, 532
Franze, Dr. Paul C., physiological action of the Nauheim springs, 938, 1140
Fraser, Dr., miners' phthisis in the Transvaal, 1362
Fraser, Dr. A. Mearns, borderlands of infectious diseases, 53; scarlet fever, 450
Fraser, Dr. E. Hewat, facial paralysis, 18
Fraser, Sir Thomas R., M.D., 741, 761
Freemasonry (Rahere Lodge, No. 2546), 598; (Middlesex Yeomanry Lodge), 1305; and medical men, 1392
Freemasons, medical, an appeal to, 841, 1249
French, Dr Herbert S., some experiments upon drugs which are said to increase the number of leucocytes in the blood, 1208; limitations of leucocytosis as a sign for operation in appendicitis, 1352
French Government and the destruction of rats in India, 193
French medical men, visit of, to London, 1742
French municipal elections and the new Public Health Act 1461
French National Congress of Gynæcology, Obstetrics, and Pediatrics, 527
French quack medicines, 204
French system of [illegible] with the Englis[illegible]
French watering [illegible] 1674
Freyberger, Dr., and the London County Council, 444
Freyer, Mr. P[illegible]
Friction and "[illegible] Injuries by (Dr. Wh[illegible], 1430
Friedreich's disease, a sporadic case of, 655; a case of, 726
Friendly societies and medical men, 200, 338, 619, 1088, 1338, 1825
Friends, cruelty of (an advertisement of thanks), 1395
Frioul, lazaret at, 128
Fripp, Sir Alfred, and the Imperial Yeomanry Hospitals report, 597
Frith, Miss Caroline, the late, bequest to St Bartholomew's Hospital by, 823
Frog's mouth, use of mucous membrane from, for grafting in a case of symblepharon (Mr. Leslie Paton), 1121
Frome Victoria Hospital, 472
Frondes Caducæ (Mr. Montagu Lomax) (review), 443
Frontal sinus empyema treated by operation (Dr. H. Tilley), 1057; followed by cerebral abscess, 1740; abscess of the (Dr. R. S. Wainewright), 1687; (Mr H. Barwell), 1750
Frontier, a pathological (Tibet mission), 1735
Frozen meat and cancer, 839
"Fruitless Experiment," a book entitled, and a disclaimer from Dr. William Murrell, 959
Fuller, Dr. Arthur W., causes of cough in children, 1191
Fuller, Dr. H. R., honour to, 951
Fulminant hæmorrhagic purpura (Dr. A. von Lerber), 763
Fumigation of vessels, 1318
Functional albuminuria (Dr. Samuel West), 509
Functional nerve troubles, 163
Furious driving of motor-cars, 131

G

Gadd, Mr. H. Wippell, Drugs: their Production, *Preparation*, and *Properties* (review), 1358; respect for, 1751
Gairdner, Sir W. T., opium in pneumonia, 517
Gaitskell, Dr. H Ashley, congenital deficiency of both upper limbs, 1495
Galabin, Dr. A. L., *Diseases of Women* (review), 808
Galbraith, Mr. H. Tener, tapeworm as a cause of chorea, 1318
Galbraith, Dr. Anna M., Four Epochs of Woman's Life (review), 729
Gall-bladder, surgery of the (Mr. E. Stanmore Bishop), 807; malignant disease of the, 1054; removal of the, 1190; operations on the, 1236
Gall-stone, removal of, from the gall-bladder and subsequent development of malignant disease of the gall-bladder (Mr. R. Lawford (Knaggs), 1054
Gall-stones, operations for, removal of the gall-bladder in (Mr. B. G. A. Moynihan), 1190
Galloway, Dr. James, erythromelalgia, 1203
Galloway, Mr. W. J. (M.P.), "Doctors and friendly societies" 338
Galt, Prof. Hugh, motoring, 527
Galton, Mr. Francis, F.R.S., "Eugenics," 1363, 1515
Galvano-cautery, intralaryngeal growths treated by means of (Dr. J. Dundas Grant), 993
Galway Hospital a case at, 767
Gamble, Mr. F. W., convoluta Roscoffensis, 33
Gamgee, Mr. L. P., chronic inflammatory enlargement of the head of the pancreas, 581; treatment of flat-foot, 1025
Gangrene, of the kidney, 111; emphysematous, bacteriology of a case of, 226; of the right foot, in the newly born, 575; of the tips of the fingers, 1204; of the scrotum, 1793

Gant, Dr. Samuel, anæsthesia by injection of water, 452
[illegible]
Garratt, Dr. G. C., metabolism in the febrile state in man, 677
Garrigou, M. F., action of mineral waters, 1371
Garrod, Dr. A. E., hæmatoporphyrinuria not due to sulphonal, 654; endocarditis, 1561
Garstang, Mr. T. W. H., control of measles, 1068
Gartloch Asylum, Glasgow, report for the year 1903, 537
Gas (see also Coal gas, Water gas)
Gas bill and health, 887
Gas, illuminating, attempted suicide by means of, 1294; poisoning by, 1733
Gases, respiration of, 1261, ignition point of,
[illegible] tomy and
[illegible] aroxysmal neuralgia, 1124
[illegible] 1428
[illegible] nosis of very
[illegible] B. Crossfield
Gastric ulcer: perforated, 91, [illegible], 1641; with appendicitis, 1783; the after history of, 283, acute, 370, observations on 193 cases of, 1125; hot-water injections as a substitute for nutrient enemata in the treatment of, 1418; ruptured, 1490
Gastro-diaphane, a new (Dr. George Herschell), 1361
Gastro duodenostomy, Prof. Jaboulay's button for, 658
Gastro enterostomy for hæmorrhagic ulcer of the stomach, 1823
[illegible]
Gemmell, Dr. J. E., amenorrhœa associated with serious eye symptoms, 876
General Lying in Hospital, Lambeth, 1047, 1234, 1777
General Medical Council, the functions of, 37, 55, next session, 1239; and medical education, 1577; and the metric system, 1734, powers of the, 1750
General Medical Council: (May 25th to May 31st) opening of the session on May 25th, 1541; changes in the *personnel* of the Council, 1541; Mr. Bryant's period of office, 1541; illness of Mr. Tomes, 1542; President's address, 1542, yearly tables, 1591; assistant examiner, 1591; inspector of final examinations, 1591; dental business, 1591; the case of Mr. Darwent, [illegible]
[illegible] educa[illegible] 1678; the m[illegible] ort on financ[illegible] ittees, 1679; [illegible] phar[illegible] macop[illegible] 1680;
[illegible] close of the session, 1681
General practitioner, the relations of, to the consultant, 239
General practitioners, meeting of, in the year 1826, 617
General practitioners, the work of, and the Midwives Act, 336
Geographical distribution of hare-lip and cleft palate (Mr. R. W. Murray), 1423
Geological excursions, 1011
George, Dr. Richard Julyan, presentation to, 1246
George, Mr. Isaac, alvus adstricta, 345
Gerard, Mr. John, The Old Riddle and the Newest Answer (review), 1256
Gerber, Dr. P. H., Atlas der Krankheiten der Nase, &c., Parts V., VI., VII. (review), 371
German or Germany (see BERLIN, CORRESPONDENCE FROM)
German Congress of Internal Medicine, 1536, 1612
German Empire and sanatoriums for pulmonary tuberculosis, 1752
German Medical Practitioners' Association, 1241
German navy, health of the, 1066
German Red Cross Association and epidemics, 1387
German sick clubs, a congress of, 546
[illegible]
[illegible] of the, for the Year 1903 (Major W. H. Horrocks, R.A.M.C.) (review), 1283
Gilson v. Ross, 666
Gift to University College, London, by Sir [illegible]
[illegible] 1126
Gilroy, Dr. James, tuberculous meningitis, 295
Given, Mr. J. C. N., poisoning by hyoscine hydrobromate, 24
Gladiatorial shows, 450
Glamorgan, Midwives Act in, 690, 1756, vagrancy in, 1020, and the diagnosis of ankylostomiasis, 1756
Glanders, human, agglutination and sedimentation in, 304, prevention of, 1768
Glands, of man, preputial or odoriferous, 146
Glands, tuberculous, value of ichthyol in, 296
Glandular fever, 84, 192
Glasgow: vacation and measles, 127, small-pox, 127, 401, 835, Western Infirmary, 127, 835, Royal Infirmary, 127, 400, 835; Victoria Infirmary, 128, Samaritan Hospital bazaar, 401, Congress of the Sanitary Institute, 451, Southern Medical Society, 615, Royal [illegible]
[illegible] 1249
[illegible] t, 1756
[illegible] eories, 437;
[illegible] sthetic gan[illegible]
[illegible] let fever at, 1010
Gloucester Infirmary, building extensions, 92
Gloucestershire, bacteriological diagnosis in, 261; vagrancy in, 261, 1084
Gloucestershire Infirmary and Eye Institution, 1055
Glycerinated calf lymph, 767, 1695, 1763
Glycerine, antiseptic and germicidal properties of, 131
[illegible]
[illegible] 1769
[illegible] fracture
[illegible] as a food,
[illegible]
Gold plate fixed over a traumatic aperture in the skull, 434
Goldsmidt, M., malaria, 1326
[illegible]
Gonorrhœa in the male, treatment of (Dr. F. W. Kurich), 939
Gonorrhœal conjunctivitis and hydrogen peroxide, 578
Gonorrhœal infection in the female, the point of primary, 190, 395
Gonorrhœal infection and the law in Munich, 265
[illegible]
Goodsall Bedell Bill, 131
Gordon, Dr. James, death of, 1385
[illegible] ases of
[illegible]; Bio[illegible]
[illegible] on for
[illegible]
Govan, report of the medical officer of health of, 1575
Gowers, Sir W. R., triple wick candle, 886; Lectures on Diseases of the Nervous System (review), 1660
Gowland, Mr. W. P., vermiform appendix [illegible]
[illegible] s at
[illegible] aths, 29
Grant, Dr. J. Dundas, labyrinthitis, 865; latent or intermittent nasal obstruction, 874; [illegible]
[illegible] nd
[illegible] ng
[illegible]
Green, Dr. A. S., value of the x rays as a factor in the diagnosis of pulmonary tuberculosis, 1426
Green, Dr. Alan B., chloroformed calf vaccine, 1498
Green, Dr. T. H., prize in clinical medicine, 112
[illegible] of the
[illegible] ratus in
[illegible] Amendment Bill, 405
[illegible] weight variability, [illegible] 1143
[illegible] ning of
[illegible] ing sicknes, 1010
[illegible] 947
[illegible] t fever,
[illegible]
Gresswell, Mr. George, dispensing, 639
Greve, Dr., influence of diseases of the teeth [illegible] 1074
[illegible]
Grossman, Dr. [illegible] tænia solium from the dog, 1207
Groves, Dr. Joseph, obesity, 1205
Grünbaum, Dr. A. S. F., Liverpool cancer [illegible]
[illegible]
Guards, mo[illegible]

Gubb, Dr. A. S., decoration of, by the King of the Belgians, 593
Guernsey Natural Science Society, 477
Guest Hospital, Dudley, 470
Guiard, Dr. H., lead paralysis, 1143
Guide to South Africa, 1903–1904 (review), 584
Guinea-worm, the life span of the, 576
Gulland, Dr. Lovell, glycogen reaction in the blood, 437
Gunn, Mr. K. E. L. G., endothelioma of the peritoneum, 726
Gunn, Mr. R. M., maldevelopment of the suspensory ligament of the eye, 802
Guns, Dr. D. R., death of, 548
Gunshot wound of the abdomen, 875
Gunther, Mr. R. T., History of the Daubeny Laboratory (review), 1729
Gusserow, Prof., retirement of, 617
Guthrie, Dr. Leonard G., automatism, 996; insular sclerosis, 1205
Gutzmann, Dr., Stuttering and Stammering Children, 1073
Guy's Hospital; concert in aid of, at Eltham, 267; and the Southwark guardians of the poor, 407; Ladies' Association, 1446, 1619; Nursing Guide (review), 1576
Gymnastics for school children, 1074 (see also Exercise, Physical, Skipping)
Gynæcological troubles arising out of child marriages in India, 1062
Gynæcology, borderlands of, 370
Gynæcomastia (Mr. A. Webb Jones and Mr. J. B. Christopherson), 865; (Mr. E. S. Crispin), 1499

H

Hackney board of guardians and experiments on animals, 1296
Haddon, Dr. John, otosclerosis, 189
Haddow, Dr. George, obituary, 547
Hadwen, Dr. W. R., 898
Hadwen *v.* Price, 898
Hæmaboloids, 1361
Hæmatemesis, 1491
Hæmatology (Clinical Pathology of the Blood) (review), 582
Hæmatoma, intracranial (Mr. J. Delpratt Harris), 1199
Hæmatoma and hæmatocele (Mr. Alban Doran), 1353
Hæmatopericardium, traumatic, 1144
Hæmatoporphyrinuria not due to sulphonal, 654
Hæmatorrhach's, traumatic, 670
Hæmaturia due to the hæmorrhagic diathesis, 91; renal, produced by terebene, 652; of unknown origin, 936
Hæmoglobin scale (Dr. T. W. Tallqvist), 942
Hæmolysis, 1612, 1670
Hæmorrhage: accidental, 27; uterine, 236; accidental, concealed, 368; intraperitoneal, and hæmatocele, 875
Hæmorrhages, extracranial and intracranial, in the newly born, 438; adrenalin in the treatment of, 1760
Hæmorrhagic diathesis and hæmaturia, 91
Haggard, Mr. John G., 521
Haines, Dr. W. S., Legal Medicine and Toxicology (review), 1128
Haines, Mr. R. W., death of, 1018
Hair, the Direction of, in Animals and Man (Dr. W. Kidd) (review), 441
Haire, Mr. William, 544
Halberstadt, Dr., pituitary body, 453
Haldane, Dr. John, miners' phthisis in the Transvaal, 1362
Haldane, Mr. R. B. (M.P.), miners' phthisis in the Transvaal, 1362
Halifax, small-pox at, 946
Hall, Dr. F. de Havilland, the Medical Examination for Life Assurance (review), 33; rupture of the left auricle, 152; ascites, 190; acute intestinal obstruction, 800; thoracic aneurysm, 1056; prevention of disease, 1203
Hall, Dr. I. Walker, effect of decapsulation on kidneys, 807
Hall, Dr. J. A., exhibition of cases by, 1125
Hall, Mr. George (of "Dr. Hall's Hygiene Co."), 407
Hall, Mr. Hamilton, "some elementary aims in education," 666
Hall, Mr. J. Basil, dermoid cyst of mesentery, 1344
Hallucination (Mr. Conolly Norman), 3
Ham, Dr. Charles E., so-called pancreatic reaction in the urine, 1378, 1684
Hamadryad hospital ship, 1464
Hamburg, enteric fever and cholera in (Dr. Reincke), 741, 891, 936, 1105, 1136, 1305, 1381
Hamidié Children's Hospital, Medical Annals and Report of, for 1902 (review), 1000
Hamilton, Dr. A., charming away of warts, 842
Hammam-R'Hira (Algérie), Etablissement Hivernal et Thermo-minéral, 1524
Hammersley, Mr. P. H. V., improved ligature, 663
Hampshire regiment and malaria, 1294
Handbill, an undesirable, 203
Handfield-Jones, Dr. M., pelvic lesions, 303; unruptured tubal gestation, 803
Hands and feet, congenital deformity of, 655
[illegible] iptions, 669
[illegible] 1903, 1463
[illegible] soma in birds in India, [illegible]
Hansemann, Prof. D. v., malignant growths, 251
Hanwell Asylum report, 747
Haran, Timotheus J., Inspector-Gen., R.N. (retired), obituary, 1080
Harcourt, Mr. Vernon, chloroform inhaler, 123
Hare, Dr. Hobart Amory, digitalis, 1004
Hare lip and cleft palate, geographical distribution of (Mr. R. W. Murray), 1423
Harford, Dr. C. F., sleeping sickness, 232
Harman, Mr. N. Bishop, a case with several abnormalities, 802
Harper, Mr. Joseph, the late, memorial to, 1539
Harries, Dr. Arthur J., Sandgate Scandal, 1821
Harris, Brigade-Surg. W., A.M.S. (retired), death of, 607
Harris, Dr. Wilfred J., post diptheritic chronic bulbar paralysis, 1057; acromegaly, 1204; lead paralysis, 1205
Harris, Mr. J. Delpratt, intracranial hæmatoma, 1199; actin mycosis, 1656
Harrison, Dr. Edward, [illegible]
Harrison, Mr. Regina[illegible] Metropolitan Street [illegible] 1301
Harrisson, Mr. Damer, perforating ulcer of the duodenum, 579; excision of the Gasserian ganglion for paroxysmal neuralgia, 1124
Hart, Dr. D. Berry, hebotomy, 580; tubal abortion, 1725
Hart, Dr. T. Stuart, paralysis agitans, 1069
Hartland, Dr. William, transposition of the viscera, 1017
Hartmann, M. Henri, Voies Urinaires, Estomac (review) 661
Hartog, Prof. Marcus, reproduction, 1214
Harveian Oration at the Royal College of Physicians of London, 1084, 1372, 1769
Harwood, Mr., opposition of, to the Pharmacy Bill, 767
Hatton, Dr. Edwin, Fullarton, a new appointment, 1224
Haughton, Dr. Edward, etiology of small-pox, 895
Haultain, Dr. F. W. N., malignant uterine complications of fibro-myomata, 1428
Havelock, Dr. J. G., alcoholic excess and insanity, 1823
Haw, Mr. Walter H., ascaris lumbricoides, 1722
Hawkins, Dr. F. H., thrombosis, 796
Hawthorne, Dr. C. O., chlorosis, 1193; neuro-retinitis in chlorosis, 1460
Hay, Dr. John, 200 cases of acute lobar pneumonia, 1643
Hayes, Dr. P. J., the late, 1466
Hayes, Dr. T. C., repeated intestinal obstruction, 1500
Hayles, Mr. A. W., talipes varus, 951, 958
Haymes, H. E., Captain, R.A.M.C., obituary, 1087
Hayward, Dr. T. E., construction of life-tables, 1805
Hazell's Annual for 1904 (review), 443
Head injuries, after effects of (Mr. T. Crisp English), 485, 559, 632
Headache (see also Eyestrain)
Headache and other neuroses, eyestrain as a cause of (Mr. Simeon Snell), 1181
Headache powders, the sale of, in New York, 403
Headache, renal, operative treatment of (Dr. Stuart Tidey), 1016
Headache, syphilitic, treatment of, 199
Heads, clean, 1311
Health and the Gas Bill, 887
Health of France and M. Cazalis' scheme of protection, 341
Health of the navy, 732, 751
Health officers, duties of, in Victoria, Australia, 618
Health, public, official status of, 1802
Health resort, the best, in England during the spring, inquiry for, 269; Portugal, as a, 687; hygiene of, 1387 (see also Sunshine)
Health Students' Association, 1238
Health, Wealth, and Wisdom (review), 583
Heanley, Mr. C. Montague, human glanders, 364
"Heaped" fire grate, 529
Heart, certain muscular structures of the, evolution and action of, 555, 629
Heart, dilatation of the (Dr. E. H. Colbeck), 990
Heart disease, congenital (Dr. W. Lee Dickinson), 1204; (Dr. H. Ebbinghaus), 1806
Heart failure and the sale of drugs in New York, 403
Heart, the rheumatic, 1772
Heart, wound of the, surgical treatment of, 1456
Heatherside Sanatorium, Camberley, 1801
Heaton, Mr. George, suppression of urine from impacted calculi, 439; intracranial complications of middle-ear disease, 876
Heaton Park, Manchester, 247
Hebotomy (lateral section of the os pubis), 580
Hedges, Mr. Killingworth, studies of lightning, 1515
Hedley, Mr. W. S., physical therapeutics, 369
Hedonal, 594
Heitz, M. Jean, dropsy, 735
Hellebore poisoning, 42
Hellier, Dr. J. B., Cæsarean section, 76
Helouan, Sanatorium Al Hayat, 901
Hemi-hypertrophy, a case of, 726
Hemisine preparations, "tabloid," "soloid," and "enule," 1360
Hepatitis, acute, with jaundice, in secondary syphilis, 1221
"Herbal treatment," 1464
Herbert, H., Maj., I.M.S., trachomatus pannus, 1354
Herbert Fry's Royal Guide to the London Charities (review), 442
Heros, Book of (Lady Rosalind Northcote) (review), 1001
Hereditary transmission of acquired morbid conditions from parent to offspring, 1070
Hereford City and County Asylum, Burghill, 388
Herman, Dr. G. Ernest, mammary cancer treated by oophorectomy, 145; puerperal eclampsia, 1057
Hermaphroditism, 696
Hernia cerebri (Mr. W. H. Clayton-Greene), 656; (Mr. A. Q. Silcock), 868
Hernia, congenital origin of (Mr. R. Hamilton Russell), 707
Hernia, diaphragmatic (Dr. Eustace Smith), 1424; in a fœtus (Dr. Lindsay and Dr. Taylor), 1573
Hernia, etiology of, 733; discussion on, at the German Surgical Congress, 1382
Hernia, gangrenous, enterectomy for (Dr. J. Cleasby Taylor and Dr. Rafael Gonzalez y Hernandez), 1055
Hernia, inguinal, strangulated (Dr. K. W. Monsarrat), 1280; (Mr. R. C. Dun), 1501
Hernia, inguinal, treatment of, by exercises, 1142
Hernia, ovarian, with twisted pedicle, in an infant, 670
Hernia, operative treatment of, in infants and children, 88
Hernia, properitoneal (Mr. H. Betham Robinson), 724
Hernia, Richter's (Dr. T. C. Litler Jones), 1281
Hernia, ventral, post-operative (Mr. E. Stanmore Bishop), 1726
H[illegible], acute infective necrosis, [illegible], 1485
H[illegible] appendix adherent in, 296, 432
Hernial troubles in an infant, 225
Heron, Dr. G. A., statistics of tuberculosis, 1137
Herring, Mr. George, and the North-west London Hospital, 949; and the Metropolitan Hospital Sunday Fund, 1372
Herringham, Dr. W. P., hæmaturia, 926; glomerular lesions of diffuse parenchymatous nephritis, 1572; elasticity of the aorta, 1571; Wanstead Infant Orphan Asylum, 1610
[illegible]
[illegible] frequency applications and suggestion, 369; a new gastro-diaphone, 1361
Hessing's apparatus and elastic traction, a patient benefited by, 655; splint case appliance, modified by Hoefftcke, 710
Heswall sanatorium for the treatment of tuberculosis, severe criticism of, 689
Heterogenesis, Studies in (Dr. H. Charlton Bastian) (review), 1060
Heterotype divisions in plants and animals, 1815
Heterogenetic origin of bacteria (Dr. H. Charlton Bastian), 1151
Hetherington, "Dr.," of America, 770
Hetraline, 35
Hewlett, Dr. R. T., method of examining water, 226; pyrexia in the course of late syphilides, 658; "internal secretion," 870; bacteriological findings in a case of climatic bubo, 1123
Hewlett, Mr. H. M., acute suffocative pulmonary œdema, 619
Heywood, Lancashire, antivaccination at, 444
Heywood, Mr. T. W., 72[illegible]
Hickman rewards the, 3[illegible]
Hidden treasure, 269

High frequency applications and suggestion, 369 (see also Electrical)
High Frequency Currents in the Treatment of Some Diseases (Mr. Chisholm Williams) (review), 878
High frequency electricity and Roentgen ray treatment, an action at law concerning the [illegible]
[illegible] d, medical
[illegible] Menière's
[illegible]
H[illegible] on-
Hime, Dr [illegible] W., humanised and sterilised [illegible]
[illegible] quack), 1222
His, Prof. Wilhelm, death of, 1372; obituary, 1446
"His Majesty's heaviest subject," 695
Hitchon, Mr. H. H. I., intestinal obstruction, 876
Hobhouse, Dr E., gliomatosis of the spinal cord, 1795
Hodgkin's disease, 1404, 1638
Hodgkinson, Dr A., presentation of address to, 1019
Hoefftcke's modified Hessing's splint case [illegible] ut of fractures
X [illegible] diagnosis of kidney stones, [illegible], malignant disease treated with the x rays, 872
Holman, Sir Constantine, a testimonial to, 891, 1006, 1015, 1093, 1139, 1172, 1250, 1320, 1396, 1474, 1546
Holmes, Mr. Timothy, complimentary dinner to, 384, 525, ambulance service for London, 1302
Holt, Major M. P. C. (D.S.O., R.A.M.C.), award of the Sir William Taylor prize to, 1015
[illegible] means
[illegible] ents,
Home Office, post of analyst to the, 1811
Home Relief Congress, the International, 1743
Home wanted for a semi-imbecile body, 906, 970; for an old woman, 1622
[illegible] or circum [illegible] inebriates, 1756
Homfray, Mr D., Dictionary of Hygiene (review), 308
Homicide by the introduction of foreign bodies, 581
Hong-Kong, plague in, 593, 823, 1170, 1299, 1443, 1585, 1675, 1828
Honorarium for a retiring asylum superintendent, 340
Honours to the medical profession, 598, 741, 862, 1224, 1446, 1742
[illegible]
Hope, Mr. Adrian C. F., the late, 1442
Hope, Dr., lecture by, in the year 1826, 1675
Hope, Dr E. W., and small pox in Liverpool, 834, 851, infantile mortality, 874, 1237, chicken pox as a notifiable disease, 885, annual report of, 1083
Hope in Shadow Land, 170
Hopogan, 35
Hoppe-Seyler, Dr G., Diseases of the Liver, Pancreas, and Suprarenal Capsules (review), 1283
H[illegible] of the left [illegible] of bacillus [illegible] ear disease, [illegible]
Horrocks, Dr. Peter, sterility, 70, fibromyoma of the uterus with carcinoma, 1057, sarcomatous fibromyoma, 1353
Horrocks, W. H., Major, R.A.M.C., annual report [illegible] year [illegible]
Horseflesh in the hospitals, 341
Horsley, Sir Victor, thyroid gland, 741, 798
Horton Asylum, 906
Horton Smith, Dr. P., sanatorium treatment, 1202
Hospital (see also under "Royal")
Hospital accommodation in Ross and Cromarty, 1695
Hospital, a Modern, the Meaning of (Mr. W. Bruce Clarke) (review), 1664
Hospital charity, abuse of, and the East London Medical Society, 1305, 1741
Hospital fees and the Bombay Government, 195
Hospital for Epilepsy and Paralysis and Other *Diseases of the Nervous System*, 1197
Hospital for Sick Children, Great Ormond-st[illegible] 173
[illegible] 899, [illegible]
Hospital isolation for cases of contagious disease (M. Debove), 900
Hospital Patients, a Home of Recovery for, 963
Hospital physician, the position of, competition for, in France, 474
[illegible] 1517
Hospital, the Deer, opposition to the erection of the, 1231
Hospital, Women's, the new at Birmingham, 1310
Hospitals and local dispensaries, the relations of, 204
Hospitals, admission to question of, 1395
Hospitals, bequests and donations to, various [illegible] ehalf of, 881 9 3, 316, 1589, 1787
H[illegible] see also [illegible]
Hospitals, military, and reform, 894
Hot air cautery (Dr K. A. Grossmann), 437
Hot bottles, the use of after surgical operations (Mr H. P. Symonds), 1150, 1250
Hot water injections as a substitute for nutrient enemata in the treatment of gastric ulcer (Dr W. Pasteur), 1418
[illegible] of the [illegible] water [illegible] s, 951, [illegible] 1449
Hove, report of the medical officer of health of, 1374
How to Keep Well (Dr. Floyd M. Crandall) (review), 442
[illegible] of measles [illegible] responsibility [illegible] nd Sir Alfred [illegible]
Hulme Day Nursery, 472
Human and plant rays (Dr J. Stenson Hooker), 686
Human remains, neolithic, discovery of, at Cheddar, 473, 1616
"Human trypanosomiasis" for "sleeping sickness," 1240
[illegible] a bead of [illegible] Mr C. W. Keith, [illegible]
Humphris, Dr F. Howard, a chart of static modalities, 362
Humphry Museum, Cambridge, 599
Hundred and five (an aged pauper), 1583
Hunter, Dr. Walter K., action of a [illegible]
Hunterian lectures of the R.C.S. Eng., 485, 555, 559, 629, 632, 703, 773, 845, 911, 973, 1034, 1097, 1446, 1549
Hunterian oration, announcement of, 384, 489
Hunterian Society, annual meeting of, 581
Hunyadi Janos water, 481
Hutchinson, Dr. J[illegible] in [illegible] ial [illegible] fth [illegible], 802, 1044, [illegible] leukæmica [illegible] chlorides in [illegible] 657; progressive cerebral degeneration, 726; hemi[illegible] seases of the [illegible] ns in early life, [illegible] 5 [illegible] H. L. Eason), [illegible]
Hyaloid canal (Mr. T. P. Anderson Stuart), 1061
Hydatid cyst, simulating enlarged prostate, 29; disease, 1657
Hydrarg. perchlor. et potassii iodidi, "tabloid," 34
Hydrarthrosis, periodic, 1667
Hydraulic pressure and syphonage in the large intestine (Dr R. W. Leftwich), 959
Hydroa during pregnancy (Mr. C. A. Douglas Bryan), 1570
Hydrocarbon as a disinfectant, 1538, 1821
Hydrogen peroxide and gonorrhœal conjunctivitis, 578
Hydrometra (Mr. J. Furneaux Jordan), 1126
Hydronephrosis, congenital, 163
Hydronephrotic kidney, a single, 512
Hydrophobia, a Chinese remedy for (Vidal G. [illegible]
[illegible] oints (Prof. [illegible] onditions of [illegible] pedicle in, [illegible]
Hygiene, Journal of (review), 1002
Hygiene, Rural, Essays on (review), 32, a Pocket Dictionary of (review), 308, the teaching of, in schools, 378, school, international congress for, 455, 672, 1011, 1072, 1086, 1151, 1156, school in its relation to education authorities, 1219, discussion on, at the meeting of the Sanitary Institute in Cardiff, 1238, of health resorts, 1387
Hygiene and temperance as school subjects, 1143
Hygiene and the police of the Seine, 836
Hygiène en Belgique Depuis 1830 (review) (Prof. Hyac. Kuborn), 939
Hygiene, Traité de (Dr. P. Smolensky) (review), 97
[illegible] igress [illegible] of, in [illegible]
[illegible] Broadbent), [illegible]
Hypermyotrophy, arterial (Dr. T. D. Savill), 506
Hypertrophic pulmonary osteo arthropathy, 157
[illegible]
Hysterectomy for cancer of the uterus, coexisting with pregnancy (Dr. Ian Macdonald and Mr. W. A. Mackay), 866
Hysteria, male, pathology of, 1809
Hysterical skin symptoms and eruptions, 273
Hystero-salpingo oöphorectomy, 805

I.

Ice for domestic use, the supply of, 1521, 1622, 1806
Ichthoform and ichthargin (Dr. James Burnet), 717
Ichthyol, in bone diseases, 269; the value of, in tubercular glands, 296; compounds, therapeutics of, 717
[illegible] compounds (Mr. [illegible])
[illegible] called, 512
Ileocolic sphincter, innervation of the, 1434
Ilfracombe, water-supply of, 1316
Illustrating, the decay of, 1698
Imbecile children, the training of, 337
Imbeciles, the care of, 840
[illegible] the, [illegible] 51 [illegible] Sir Alfred Fripp, 597, 60[illegible]
Impersonation, a charge of, 1094
Impregnating parts of the body with medica- [illegible] 903
[illegible] of (Mr. Harrison Williamson), 803
Ince, Mr. Joseph, Elementary Dispensing Practice (review), 372
Inch measure, a new, 374
Income tax and medical men, 134, 1320, 1546
Incontinence of fæces, treatment of, by the submucous injection of paraffin (Mr. A. H. Burgess), 716
Incorporated Medical Practitioners' Association, 1674, 1694
Incorporated Society of Medical Officers of Health, West of England and South Wales branch, 614; election of president, 1077; provincial meeting, 1809
India, annual report of the Imperial bacteriologist, 661; annual report of the Pasteur Institute of India, 662
India, cancer in, 549
India, Census of 1901 (review), 1606
India, Government medical officers in, private fees of, for attendance on native chiefs and nobles, 1535, 1538
India, new Army Order issued in, 121
India, notes from, 55, 193, 335, 396, 541, 757, 950, 1017, 1083, 1153, 1309, 1460, 1538, 1613, 1754
India Office medical board, 122
India, plague research in, 37; plague in, 193, 335, 541, 839, 904, 960, 1018, 1083, 1153, 1170, 1309, 1461, 1538, 1754, 1821
India, the sale of cocaine in, licences for, 407; Poisons Bill for, 541; salt tax in, 1810
India, variations of the population compared with the variation of rainfall of, 1172
Indian cobra poison, the action of (Major R. H. Elliot, I.M.S.), 715
Indian Medical Service (see also Services)
Indian Medical Service, new Army Order, 121; new regulations for, 126; post-commission study, 839; annual dinner in London, 1371, 1744
Indian rest camps, 331
Indiarubber and synthesis, 525
Indiarubber antrum plug (Mr. Claud Woakes), 811
Indigent, the temporarily, asylums for, 835
Inebriates Acts, the working of, 45
Inebriates, treatment of, 1317, 1743
Inebriates, women, 1008; of Lancashire, 1159
Inebriety, the relation of, to mental disease (Dr. Robert Jones), 1125
Infant feeding (Dr. Louis Fischer) (review), 1431
Infant feeding in France, 1220
Infant life protection in a small French commune, 1021
Infant mortality and the supply of humanised sterilised milk, 872
Infant Orphan Asylum at Wanstead, 1738
Infantile hygiene in New South Wales, 1825
Infantile mortality in Liverpool, 1237; in Croydon, 1439
Infant, Nutrition of the (Dr. R. H. Vincent) (review), 808
Infantile mortality and the milk-supply, 614
Infantile mortality, high, the causes of, 334, 462, 686; in Australia, 765; in France, 888
Infantile paralysis, 1692
Infantilism, pancreatic (Dr. Byrom Bramwell), 725
Infantry vade mecum, 1458
Infants, accidental suffocation of, 767
Infants, feeding of, 253, 302, 1743
Infants' Health Society, 1223
Infants' and invalids' food (Fry and Co.), 373
Infants, Care of (Dr. Sophia Jex-Blake) (review), 564
Infants, feeding of, humanised and sterilised milk in, 959
Infants' milk food, 1360
Infants of factory workers, suckling of, 1691
[illegible] ing of (Dr. G. Eric [illegible]
[illegible] (Surg.-Gen. G. M. [illegible]
[illegible]
Infection, during operations, a source of, 235; rheumatic, some clinical aspects of, 565
Infection, reckless exposure of others to, 1374
Infectious disease, prevention of, in Bath, 614, 755, 833, 896, 959; spread of 1666; protracted and recrudescent, diphtheria and scarlet fever, 1724
Infectious diseases, borderlands of, and their management, 52, 53, 123, 188, 253
Infectious Disease Notification Act, 1889, and the working of the Act in Dublin, 1239
Infectious diseases hospital, opposition to the erection of an, 1239
Infectious diseases and dockyard employés, 473
Infectious Diseases, Memoranda on, for the Use of School Teachers (Dr. James W. Allan) (review), 1061; and schools, 1583
Infectivity of scarlet fever, 882
Infectivity of the tubercle bacillus, 823
Inflammation, Infection, and Fever, General Pathology of (Dr. E. W. Ainley Walker) (review), 1662
Influenza in Belfast, 473
Influenza and malaria in Russia, 1243
Influenzal neuritis and septicæmia, 653
Information Bureau of the University of Paris, 545
Ingleby lectures of the University of Birmingham, 1072
Inguinal hernia, treatment of, by exercises, 1142
Inguinal hernia, strangulated (Dr. K. W. Monsarrat), 1280
Inguinal trusses (Dr. W. McAdam Eccles), 658
Inhaler ether, bag for, 1002; chloride of ethyl (Dr. J. Maxwell Wood), 1733
Injuries, Treatment of, by Friction and Movement (Dr. Wharton P. Hood) (review), 1430
Inland health resort, inquiry for an, 269
Inoculation against enteric fever in South Africa, 767, 1695
Inoculation in India, 335, 1083, 1170
Inquest upon a "Christian Scientist," 841; question as to an, 1829
Insane and epileptics, 1743
Insane, pauper, or rate-supported, 589
Insane, progressive paralyses in the (Dr. T. B. Hyslop), 578
Insanities, a classification of the, as a basis for the theory of criminal responsibility, 739
Insanity, adolescent, katatonic form of, 173; in the United States of America, 525, 618; legal test of, 536; traumatic, 634; defence of, and judges, 676; remarks on, in the year 1826 812; in everyday life, 1359; leucocyte observations in, 1505; and alcoholic excess, 1823
Insanitary areas in Liverpool, 260
Inspection of the Paris hospitals, 616
Inspector-General of the Forces, the new, 680
Inspector of nuisances, Birmingham, resignation of, 758
Inspiration the principal agent in venous circulation 1590
Institute of Chemistry of Great Britain and Ireland, pass-lists, 405, 1316
Institute of Colonial Medicine, 264
Institute of Medical Sciences, 112, 249, 527, 605, 950, 1460
Instra warmer, 1093
Insurance Blue-book and Guide, 1903-04 (review), 308
Insurance of medical men against the dangers of their profession, 1811
Insurance companies, death certificates for, 407; and operations upon insured persons, 1621
"Internal secretion" in disease and in treatment, 741, 793, 870
International Clinics, Vol. I. (review), 1797
International Congress of School Hygiene at Nuremberg, 455, 672, 1011, 1072, 1086, 1151, 1156
International Home Relief Congress, 1743
Interscapulo-thoracic amputation, 366
Intestinal lithiasis (Dr. Bottentuit), 1113
Intestinal obstruction, seven cases of, 153; with gangrene of the cæcum, 510; chronic, 725; acute, early diagnosis of, 791 800; an unusual case of, 876; following typhoid fever, 936; repeated, 1500; three cases of, 1787
Intestine, strangulation of, by an intraperitoneal band, 296; rupture of, 873
Intestine, the large, syphonage and hydraulic pressure in, 959, 1081, 1154, 1235, 1357
Intoxication and lunacy, 1763
Intracranial operations, a retractor for, 879
Intralaryngeal growths treated by means of the galvano cautery (Mr. J. Dundas Grant), 993
Intraperitoneal hæmorrhage and hæmatocele arising from tubal abortion or rupture (Dr. G. Balfour Marshall), 875
Intrathoracic operations, 1308
Intra-uterine cretinism (so-called) and its supposed identity with endemic and sporadic cretinism (Dr. Med. H. Bayon), 1051
Intravesical separation of the urines (Mr. R. A. Bickersteth), 859
Intussusception, triple telescopic, originating in Meckel's diverticulum, 505; four cases of, 615; a rare case of, in the year 1826, 745; chronic, due to multiple polypi of the intestine (Dr. Mabyn Read), 797; two cases of, in children, 1207; four cases of (Mr. F. C. Wallis), 1648
Invalid Children's Aid Association, 1369
Inventive capacity, development of, 1736
Inverness Asylum, 544; Northern Infirmary, 1466
Inversion, acute, of the uterus, 873, 1649
Iodide rash in a syphilitic patient resembling a variolous eruption (Mr. E. J. Hynes), 421
Iodine, non-toxic preparation of (Dr. V. H. Wyatt Wingrave), 994
Ionides, Mr. T. H., gliomatosis of the spinal cord, 1795
Ireland, an action against medical men in, 605; legal and medical professions in, 611; some public health problems in, 655
Ireland, unqualified persons practising as dentists in, 814

IRELAND, CORRESPONDENCE FROM.—The tenement houses of Dublin, 59—The new Royal College of Science for Dublin, 59—Medical events in 1903, 59—The treatment of tuberculosis, 59, 835, 1313—Queen's College, Belfast, 128, 402, 616, 761, 900—Health of Belfast, 128, 340, 401, 761, 1085, 1313, 1691, 1823—Rainfall in Belfast in 1903, 128—University education in Ireland, 198, 263—The fate of Dr. J. R. Welland, Lt. R.A.M.C., 198—Royal Victoria Hospital, Belfast, 198, 340, 761, 473, 962, 1313, 1616—The poor consumptive in the north of Ireland, 198—Poor-law medical officers of Ireland, 263, 952—Dangers of overcrowded theatres, 263—Proposed sanatorium for consumptives at Whiteabbey, 263; at Cork, 835—Revaccination in Dublin, 340—City Hospital for Diseases of the Skin, Dublin, 340—Charge against a dispensary medical officer, 340—Epidemic of blood poisoning in Cootehill Workhouse, 340, 615—Payment of dispensary medical officers' fees, 340, 1758—The Midwives Act, 1902, and Irish training institutions, 340—The Central Midwives Board and Irish midwifery training, 401—Typhus fever in Ireland, the death of Mr. W. J. Coneys, 401—Clonskeagh small-pox hospital, 401—Trinity College, Dublin, provostship, 401, 901, 1160; a degree in dentistry at, 690—Mater Infirmorum Hospital, Belfast, 402, 1160—Forster Green Hospital for Consumption, Belfast, 402—Shell fish on the coast of Ireland, 473, 615—Ulster Medical Society, 473, 616, 962, 1240—Influenza in Belfast, 473—Fever-stricken Arranmore, 473—Belfast District Lunatic Asylum, 473, 835—A gift of radium by the Lord Mayor of Belfast, 473—Legal action for personal injury caused by the use of the Roentgen rays, 544—Roy[illegible] 545, [illegible] Infirm[illegible] 545—[illegible] Ultra[illegible] Sama[illegible] Maternity [illegible] rate entrée at Dublin [illegible] on Achill Island, 761; in Limavady union, 1466; in Ulster, 1758; in Belfast, 1823—Public health of Dublin, 761, 1240—Stewart Institution for Imbecile Children, 900—Carmichael prize essay, 900—Dublin Sanitary Association, 900, 1239, 1691—Ulster Hospital for Women and Children, 962—Death of Dr. James Stuart, 962—Dispensary medical officers, 340, 1021, 1240, 1312, 1540, 1616—Irish university education and the Cork Queen's College, 1021—Death of Mr. Hamilton Ross, M.D. Edin., 1021—The late Sir Philip Crampton Smyly, 1084, 1691—Mr. J. Gilbert Smyly, 1757—Ballinasloe District Lunatic Asylum, 1084—The freedom of the city of Belfast for Mrs. Pirrie, 1084—Belfast Ophthalmic Institution, 1085—Newry guardians and the medical officers of the Newry union, 1085—Royal Academy of Medicine in Ireland, 1160—Chair of Botany in Trinity College, 1160—Registration of nurses, 1160—Belfast board of guardians, 1160, 1758—Portrush Cottage Hospital, 1160—County of Cork joint hospital district, 1240—National Association for the Prevention of Consumption and other Forms of Tuberculosis, 1313—Seagulls and

therings, 1315—Meath Hospital and County Dublin Infirmary, 1385—Cork street Fever Hospital, Dublin, 1385—Westmoreland Lock Hospital, 1386—Sanitary state of Lisburn, 1386—Newry Fever Hospital, 1386—Derry Eye, Ear, and Throat Hospital, 1386—Medical relief in Coleraine Union, 1386—Nation[illegible]
The Is[illegible]
County [illegible]
Rainfa[illegible]
Fund [illegible]
1540—[illegible]
Monag[illegible]
of Lo[illegible]
pital, [illegible]
Dublir[illegible]
[illegible] to
[illegible] 1691
[illegible] 1757—
[illegible] lation
[illegible] 1021,
Irish Medical Association, Journal of, 730, 1731; South Down Branch of, 1085; Belfast and District Branch of, 1540, annual meet-[illegible]
[illegible] (Mr. T. K.
[illegible] Associa-
[illegible] al general
[illegible] 952, 1170, 1317
Irish training institutions and the Midwives Act, 1902, 181, 340
Irish University education, 336; and the Cork [illegible]
[illegible] (Dr. J. Sim Wallace) (review), 1061
Ischæmic paralysis, 434
Islington Medical Society, 1068
Ismailia, anti malarial measures at, 672, 689, 834
Isolation, hospital, of scarlet fever, 450, 899, [illegible]
[illegible] from)
Italy, midwives in, 113
Italy, the "medico condotto" of, 470

J

Jaborandi leaves, alkaloids of, physiological action of, 1433
Jaboulay, Prof., button for gastro duodenostomy, 653
Jacksonian epilepsy, 1795
[illegible] t
[illegible] s
[illegible] t
Jamieson, Dr. W. Allan, x rays and light for cutaneous disease, 161; and the Order of St. John of Jerusalem in England, 741
Japan, imperial navy of, 391; social problem in, 817
[illegible] er removal of a large ovarian cyst, 997; obstructed labour, 1204; recurring eclampsia, 1282
Jaundice, acute hepatitis with, in secondary syphilis, [illegible]
Jaw, upper [illegible] a polyp[illegible] (Mr. F. A. [illegible]), 959
Jaws closure of, due to cicatricial bands (Dr. R. J. Cropper), 653
Javle, Dr. F., and the dangers of the Trendelenburg position, 740
Jeanselme, Prof. E., Cours de Dermatologie Exotique (review), 1001
Jejunum, peptic ulcer of the (Mr. A. W. Mayo Robson), 1056
Jelliffe, Dr. Smith Ely, minor neuroses and psychoses, 1737
Jenkins, Mr. B. P. (F.R.A.S.), The British [illegible]
[illegible]
Johannesburg, plague at, 904, 1523 (see also South Africa)
Johannessen, Van, Prof. Axel, position of school hygiene in Norway, 1073
Johns Hopkins Hospital's losses by fire compensated, 1314
Johnson, Dr. Jossé, and Dr. Otto Schmidt's treatment of cancer, 684
Johnson, Miss Theodora, Swedish system of physical education, 100
Johnston, Dr. Alexander, value of the Widal [illegible]
Jones, Dr. Herbert, tenure of office of the medical officer of health, 1535
Jones, Dr. H. Lewis, treatment of malignant disease by x rays, 1426
Jones, Dr. J. Howard, control of measles, 1136
Jones, Dr. O. Clayton, chloretone, 539
Jones, Dr. Robert, physical and mental de-[illegible]
[illegible] to
[illegible] in
Jones, Mr. [illegible], acute traumatic cholecystitis, 346
Jones, Mr. J. J., the late (Sandgate), 527, 1688
Jones, Mr. Robert, tuberculous arthritic diseases [illegible]
[illegible] atlic, 551;
[illegible] Sandgate,
Jordan, Joseph (Dr. F. W. Jordan) (review), 1730
Jordan, Mr. J. Furneaux, hydrometra, 1126
Journal of Anatomy and Physiology (review), 238 1213
Journal of Hygiene (review), 1002
Journal of Physiology (review), 33, 1001, 1061, 1433
Jo[illegible] f the
Jo[illegible] tion, (review), [illegible]
Journal of the Royal Army Medical Corps, 1683
Jousset, Dr. P., The Pathogenic Microbes (review), 1000
[illegible] stituent
[illegible] ionary
[illegible] F. J.
[illegible] India
Jury of matrons, 481

K

Kaffir milk-pox (Dr. W. E. de Korté), 1273
Kaiserin Friedrich Hospital for Children, [illegible]
[illegible] r, analysis of,
[illegible] 1721
[illegible] scoticensis, 33
Keen, Prof. W. W. Keen, retiring age for professors, physicians, and surgeons, [illegible]
Kellock, Mr. T. H., foreign body impacted in the left bronchus, 795, 802
Kelly, Dr. A. O., International Clinics (review), 1797
[illegible] 369
Kempe, Dr. C. Gilbert, 124
Kennard, Dr. O. P., mode of infection by nematoids, 1379
Kennedy, Mr. Angus E., fracture of the skull [illegible]
[illegible] ing
[illegible] ies,
Kernig's sign (M. Netter), 1369
Kerr, Dr. James, school ventilation, 1073
Kerr, Dr. J. M. Munro, vaginal Cæsarean section, 234; contracted pelvis, 727; spon-[illegible]
[illegible] arch-
[illegible] sickness, 334
Kidd, Dr. Percy, Stokes Adams disease, 411
Kidd, Dr. Walter, Direction of Hair in Animals and Man (review), 441
[illegible] of
[illegible] F.
[illegible] ary,
[illegible] I.
[illegible] 1 to
[illegible] dina-
Kilmarnock Infirmary, 547
Kilmer, Dr. Theron Wendell, Practical Care of the Baby (review), 1432
[illegible] ng
King and Queen, opening of new schools at Cambridge by the, 547; an interesting ex-[illegible]
K[illegible]
King Edward's Hospital Fund for London, annual meeting of the general council of, [illegible]
Kingseat Asylum, opening of, 340, 544, 1540
Kingsford, Dr. L., tuberculosis of the tonsils, 89
[illegible] the medical
[illegible] Hygiene
[illegible] e, 65
[illegible] Bakehouse
[illegible] gen anæs-
Kirwan, Dr. J. St. Lawrence, a new appointment for, 1084
Kitchen, sanitation in the, 744
Klein, Dr., bacillus carnis, 225

Knaggs, Mr. R. Lawford, rupture of the intestine, 873; malignant disease of the gall-bladder, 1054
Knaggs, Mr. Samuel, medical practitioners and dispensing, 609
Knight, Dr. Charles Huntoon, Diseases of the Throat and Nose (review), 306
Knights Hospitallers in Scotland and their Priory at Torphichen (Dr. G. T. Beatson) (review), 1433
Knightsbridge barracks, and the late Duke of Cambridge, 884
Knowledge and Scientific News (review), 1731
Koch, Dr. Waldemar, Physiological Chemistry (review), 443
Koch, Prof., and South Africa, 617
Koplik's spots in the diagnosis of measles (Dr. J. C. Muir), 1650
Korsakoff's disease, recent observations on, 819
Korté, Dr. W. E. de, amaas, or Kaffir milk-pox, 1273
Kraske's operation, a case of, 875
Kuborn, Prof. Hyac, Hygiène en Belgique Depuis, 1830; (review) 959
"Kuma," 1512
Kumbakonam municipality, neglect in sanitary matters of, 1017
K'ung the Master, Sayings of (Mr. Allen Upward) (review), 1433

L

Labour colonies and vagrancy, 339
Labour, traumatisms of the eye during, 246; obstructed, 1204
"Labourers of death," authorship of the term, 335
Labyrinth, suppuration of, etiology and treatment of, 416
Labyrinthine suppuration (Dr. W. Milligan), 805; caries, vertigo due to (Mr. A. E. Cumberbatch and Mr. C. E. West), 1570
Laing, Dr. A. R., new anaerobic apparatus, 515
Laing, Mr. E. A. R., double amputation, 95; ruptured spleen, 1122
Laird, Dr. A. J., *report on the borough of* Crewe for 1903 1374
Lake, Mr. Richard, Menière's disease, 434, 1057; asthma, 1057; aural vertigo, 1567
Lake Village, British, at Glastonbury, 1756
Lakeland Dells and Fells In (review), 99
Lamacq-Dormoy, Dr., lymphadenitis in varicella, 888
Lamb, Capt. G., I.M.S., action of snake venoms on the nervous system, 20; Poison of the Banded Krait (review), 877; precipitin of cobra venom, 916
Lambert, Daniel, a note respecting, 270
Lambeth, old, 269
Lamp, a portable, for laryngoscopic purposes, 374
Lanark, Bellefield Sanatorium 1539, 1757
Lanark District Asylum, Hartwood, report for the year ending May 15th, 1903, 688
Lanarkshire and British brandy, 593
Lancashire, Dr. G. H., tuberculous affections of the face, 304
Lancashire inebriates, 1159
Lancashire and Yorkshire Railway ambulance work, 1616
Lancaster, Royal Albert Asylum, 1823
LANCET, THE, Relief Fund, 172; application form, 172, A, B, C, D; fifteenth annual report, 178; Hospital Sunday Fund supplement, 1625–1632
Lander, Mr. Francis Joseph, obituary, 1243
Landers' patent grate, 530
[illegible] Berlin, 1086
[illegible] 759
[illegible] c obstruction of the large bowel 19, 124
Lanfine Home for Consumptives at Broomhill, Glasgow, 1465
Langenhagen, Dr. de, treatment of muco-membranous colitis, 1186, 1223
Langho, Homes for Epileptics and Inebriates at, 1756
Langley, Mr. J. N., sympathetic system of birds and the muscles which move the feathers, 33
Langmead, Dr. Frederick, suprarenal apoplexy in children, 1496
Lannelongue, M., the graphic method, 1240
Lansdale, Dr. W., medical profession and dispensing, 692
Lanz, Dr., function of the thyroid gland, 1308
[illegible] laryngeal operations,
[illegible] trating (Dr. Eugene
[illegible]
Laryngitis, obstructive, in measles, 1810
Laryngological rhinological, and otological experiences (Mr. John Bark), 909
Laryngoscopic purposes, portable lamp for, 374
Larynx, lymphatics of the, and malignant disease (Mr. R. W. de Santi), 1710
Larynx (see also Laryngological Society under Medical Societies)
Laslett, Dr. E. E., Adams-Stokes syndrome, 1568
Lateral Curvature, Stooping, &c. (Mr. E. Noble Smith) (review), 443
Latent or intermittent nasal obstruction, 429
Latham, Dr. Arthur, Dr. Marmorek's anti-tuberculous serum, 979; sanatoriums for working men, 1291
Lathina door-mat, 1832
Latin-American Congress of Medicine and Hygiene, at Buenos Aires, 257, 1153, 1382
Lauder, Mr. R. E., scarlatinal fever and its bearing upon hospital treatment, 712, 883
Laundries and textile factories, persons employed in, a return of, 950
Laveran, M., a new parasite, 1021; human trypanosomiasis, 1240
Law (see also Actions-at-law, Legal, Medicine and the law, Lunacy law, Poor-law)
Law courts, the French, medical cases in, 1541
Law of lunacy, muddle of the, 612, 1796
Law relating to Pauper Lunatics (Mr. Sydney Davey) (review), 1209; to the sale of medical practices 1821
Law Union and Crown Insurance Co., and its medical examiners 345, 481
Lawrence, Alderman John, death of, 1383
Lawrence, Mr., and the Royal College of Surgeons in the year 1826, 598
Lawrence, Mr. H. Cripps, congenital deformity in the fœtus 1424
Lawrence, Mr. Sidney C., *presentation to*, 1091
Lawrie, Dr. W. D., acute anterior poliomyelitis, 439
Lawson, Dr. David, results of treatment in 301 cases of phthisis by open-air methods, 1420
Lay press and medical terminology, 408
Lazaret at F.i ul, 128
Lea, Dr. Arnold W. W., abscess *in the* wall of the uterus, 227; fibromyoma uteri treated by hysterectomy, 875
Lead in cream of tartar, 606
Lead poisoning, in white lead factories, 23; and water-supplies, 383; in certain trades, 549; paralysis, 1143, 1205; primary optic atrophy due to, 1724

LEADING ARTICLES.

The public and the medical profession, 36—Plague research in India, 37—The functions of the General Medical Council, 37—Dental requirements of the army, 102—Scottish Poor-law Medical Service, 102—Housing of the poor in Dublin, 103—Control of home and foreign shell-fish, 168—Edinburgh Royal Infirmary: the que [illegible] 169—Slum life in [illegible] of the medical offic [illegible] of London, 171—Relations of the general practitioner to the consultant, 239—Sight-testing by opt [illegible] 241—Medical [illegible] of medicines [illegible] malignant g [illegible] of lunatics, 31 [illegible] Paralysed and Epileptic and Organised Scientific Research, 313—Medical examinations for life assurance, 375—"Eye-strain," 376—Revaccination Bill, 1904, 377—Public affairs and public health, 445—Spread of small-pox by tramps, 446—Brandy *v.* British brandy, 447 — What is brandy? 1578—Biological and comparative aspects of cancer, 448—Rainfall and mortality of 1903, 516—Administration of opium in [illegible] the denta [illegible] fares, 51 [illegible] After-care [illegible] 589—A chemical conception of the ether, 590—Progress of the University of Cambridge, 664—Dispensing by medical men, 665—Study of Childhood, 666—Health of the navy, 732—The medical officer of health: his report and his sanitary authority, 732 — Etiology of hernia, 733—Homeless poor of the metropolis, 813 — O'Duffy *v.* Jaffe, Surgeon Dentists, Limited, 814—Treatment of operation wounds, 815—Sale of Whisky, 816—Gift to University College, London, and medical education, 880—Recent epidemic of small-pox in Live [illegible] scarlet fever, 882— [illegible] Army Medical Ser [illegible] 914—Attitude of the legal profession towards the medical profession, 945—Education Act and physical fitness, 1003—Cumulative action of drugs, 1004—Remarkable resuscitations, 1005—Medical defence, 1065—Private practice in Germany, 1066 — Fees of public vaccinators, 1067 — Isolation of small-pox in Germany, 1135 — Control of measles, 1136 — Cholera and enteric fever epidemics at Hamburg, 1136 — Small-pox and vagrancy, 1215—Feeding in relation to the health of the young, 1216—A bolt from the blue, 1217—Reno-renal reflex pain, 1218—"Passing off," 1289—Value of the auricle of the ear, 1290—Sanatoriums for working men, 1291—Undesirable marriages, 1292—Miners' phthisis in the Transvaal, 1362—Sociological Society, 1363—Horrors without foundation, 1364—The office of coroner, 1365—Future of medical education in London, 1435—A Russian medical man on medical practice, 1436—Oliver-Sharpey lectures 1437—Physical exercises for children, 1513—The Registrar-General's annual summary, 1514—Sociology, 1515—The Stockport Hospital scandal, 1516—General Medical Council and medical education, 1577—Relation of human to bovine tuberculosis, 1580—Hospital Sunday, 1665—Influence of the unrecognised case *in* the spread of communicable disease, 1666—Periodic hydrarthrosis, 1667—Metric system in medicine, 1734—A pathological frontier, 1735—On the immunity from plague enjoyed by Shanghai, 1735—Official status of public health, 1802—Royal College of Surgeons of England: election of Members of Council, 1803—Earlswood Asylum, 1804

Leaf, Mr. Cecil H., The Lymphatics (review), 236

LECTURES.

Bark, Mr. John:—
  Presidential Address (Abstract of) on Some Laryngological, Rhinological, and Otological Experiences, delivered before the British Laryngological, Rhinological, and Otological Association on March 11th, 1904, 909

Bennett, Sir W. H.:—
  A Clinical Lecture on Deceptive Signs of Improvement following upon Septic Intoxication in Acu [illegible] in Young People, [illegible] Hospital Medica [illegible] 1903, 1

Bishop, Mr. E. Stanmore:—
  An Address on Some Forms of Chronic Abdominal Surgical Disease, delivered before the Bury and District Medical Society on Nov. 24th, 1903, 139

Cammidge, Dr. P. J.:—
  The Arris and Gale Lecture on the Chemistry of the Urine in Diseases of the Pancreas, delivered before the Royal College of Surgeons of England on March 14th, 1904, 782

Caton, Dr. R.:—
  The Harveian Oration on (1) the Medicine and the *Medicine God of the Egyptians*; contemporary Views of the Circulation; (2) Prevention in Valvular Disease, delivered before the Royal College of Physicians of London on June 21st, 1904, by Richard Caton, M.D. Edin., F.R.C.P. Lond., 1769

Cheyne, Mr. W. Watson:—
  A Clinical Lecture on the Treatment of Cancer of the Breast by Operation, delivered at King's College Hospital, 699

Corner, Mr. Edred M.:—
  The Erasmus Wilson Lectures on Acute *Infective Gangrenous Processes (Necroses)* of the Alimentary Tract, delivered before the Royal College of Surgeons of England on March 21st, 23rd, and 25th, 1904
    Lecture I., 1334
    Lecture II., 1410
    Lecture III., 1484

Duckworth, Sir *Dyce, M.D.*:—
  Some Observations on Medical Examinations for Life Assurance, being the Presidential Address delivered before the Life Assurance Medical Officers' Association on Jan. 27th, 1904, 355

English, Mr. T. Crisp:—
  Hunterian Lectures (Abstract of the) on the After effects of Head Injuries, delivered at the Royal College of Surgeons of England on Feb. 15th, 17th, and 19th, 1904
    Lecture I., 485
    Lecture II., 559
    Lecture III., 632

Hellier, Dr. J. B.:—
  A Clinical Lecture on Seven Cases of Cæsarean Section, delivered in the Leeds General Infirmary on Nov. 27th, 1903, 76

HORROCKS, Dr. PETER:—
A Lecture on Sterility, delivered at the Medical Graduates' College and Polyclinic on Oct. 26th, 1903, 70

HUTCHISON, Dr. ROBERT:—
Goulstonian Lectures on Some Disorders of the Blood and Blood-forming Organs in Early Life, delivered before the Royal College of Physicians of London on March 8th, 10th, and 15th, 1904
Lecture I., 1253
Lecture II., 1323
Lecture III., 1402

KEETLEY, Mr. C. R. B.:—
[illegible]

KEITH, Dr. ARTHUR:—
Hunterian Lectures (Abstract of the) on the Evolution and Action of Certain Muscular *Structures of the Heart, delivered before* the Royal College of Surgeons of England on Feb. 22nd, 24th, and 26th, 1904
Lecture I., 555
Lecture II., 629
Lecture III., 703

KIDD, Dr. PERCY:—
A [illegible] Stokes [illegible] with [illegible] the [illegible] 411

LOCKWOOD, Mr. C. B.:—
A Clinical Lecture on the Early Diagnosis of Tumours of the Bladder, delivered at St. Bartholomew's Hospital on March 16th, 1904, 1633

MARSH, Prof. HOWARD:—
Hunterian Lecture on Intermittent Hydrops of the Joint, and the Influence of Growth on Deformities, delivered at St. George's Hospital on May 25th, 1904, 1549

NEWSHOLME, Dr. ARTHUR:—
Introductory Address on the Relation of the Medical Practitioner to Preventive Measures against Tuberculosis, delivered at the Post-Graduate Course of the Mount Vernon Hospital for Consumption and Diseases of the Chest on Jan. 7th, 1904, 282

NORMAN, Mr. CONNOLLY:—
A Clinical Lecture on Hallucination, delivered at the Richmond Asylum on Jan. 6th, 1903, 3

OLIVER, Dr. GEORGE:—
The Oliver-Sharpey Lectures on Recent Studies on the Tissue-lymph Circulation, delivered before the Royal College of Physicians of London on April 12th and 14th, 1904
Lecture I., 1175
Lecture II., 1262

OWEN, Sir ISAMBARD:—
[illegible] Electro-thera[illegible] nal Conver[illegible] Therapeutic [illegible] of London before the Medical Society of London on May 16th, 1904, 1399

PARSONS, Mr. J. HERBERT:—
The Arris and Gale Lectures on the Neurology of Vision, delivered before the Royal College of Surgeons of England on March 16th and 18th, 1904
Lecture I., 1029
Lecture II., 1102

RAWLING, Mr. LOUIS BATHE:—
Hunterian Lectures on Fractures of the Skull, delivered before the Royal College of Surgeons of England on Feb. 29th and March 2nd and 4th, 1904
Lecture I., 973
Lecture II., 1034
Lecture III., 1097

ROBERTS, Dr. D. LLOYD:—
Address (Abstract of an) on Medical Ethics [illegible]

ROBSON, Mr. A. W. MAYO:—
Hunterian Lectures on the Pathology and Surgery of Certain Diseases of the Pancreas, delivered before the Royal College of Surgeons of England on March 7th, 9th, and 11th, 1904
Lecture I., 773
Lecture II., 845
Lecture III., 911

ROGERS, Capt. LEONARD (I.M.S.):—
A Lecture on the Physiological Action and Antidotes of Snake Venoms with a Practical Method of Treatment of Snake Bites delivered in the Physiological Laboratory of the University of London on June 9th, 1903, 349

ROSE, Mr. PERCY:—
Some Remarks upon the Midwives Act in its Bearing upon the Work of the General Practitioners, 356

RUSSELL, Mr. R. HAMILTON:—
Presidential Address on the Congenital Origin of Hernia, delivered before the Medical Society of Victoria, Australia, on Jan. 6th, 1904, 707

SAVILL, Dr. THOMAS D.:—
A Clinical Lecture on Hysterical Skin Symptoms and Eruptions, delivered at the West-End Hospital for Diseases of the Nervous System, 273

TAYLOR, Dr. FREDERICK:—
[illegible]
Lecture III., [illegible]

TAYLOR, Dr. JOHN W.:—
Inaugural Address (Abstract of an) on the Diminishing Birth-rate and what is involved by it, delivered before the British Gynæcological Society on Feb. 11th, 1904, 492

WILLIAMS, Dr. C. THEODORE:—
Oration on the Sanatorium Treatment of Pulmonary Tuberculosis, delivered at the opening meeting of the Reading Pathological *Society on Oct. 15th, 1903*, 278

WILLIAMS, Dr. W.:—
[illegible]
Lecture I., [illegible]

WILLIAMSON, Dr. R. T.:—
A Clinical Lecture on the Treatment of Diabetes Mellitus, delivered at the Manchester Royal Infirmary on July 8th, 1903, 213

WOODS, Dr. J. F.:—
[illegible]

League of Mercy, garden party, 1693
Lecture agency date book, 1320
Le Damany, M., dislocation of hip-joint, 616
[illegible] infec-
Lee, Mr. C. G., [illegible] of the retina, 938
Le[illegible] the new
Le[illegible] 656,
[illegible]
Lefcwich, Dr. R. W., syphonage and hydraulic pressure in the large intestine, 959, 1151, 1367
Leg, osteoplastic amputations of the, 1758
Legal and medical professions in Ireland, 611, 945
Legal Medicine and Toxicology (edited by Dr. F. Peterson and Dr. W. S. Haines) (review), 1128
[illegible] towards the
[illegible] sep
Lemaire, M. Henri, acute hepatitis with jaundice, 1221
Lemieux, Dr., and Dr. Marmorek's anti-[illegible]
[illegible] e genera-
[illegible] infection
[illegible] picture),
Lepine, Monsr., Roentgen rays, 341
Leprosy, the prevention of, 318; the incidence of, in the British Empire, 396; in British India, 540; etiology of (Dr. George Turner), 595; in New South Wales, 1068, 1674
Leprosy, Hindu ideas of, in the year 1825, 1214
Lerber, Dr. A. von, fulminant hæmorrhagic purpura, 763
Leredde, Dr. E., Photothérapie et Photobiologie (review), 909; treatment of cancer of the skin by the x rays, 1085
Lesions, suppurative, of the nasal accessory sinuses, surgical treatment of (Mr. Herbert Tilley), 1414
Letcher, Dr. H. R., 765
[illegible]
[illegible] upon drugs which are said to increase the number of, 1258; enumeration of, 1790
[illegible] for
[illegible]
[illegible] ory), 330;
[illegible] nister-[illegible] thaler,
Lewers, Dr. A. H. N., carcinoma associated [illegible]
[illegible]
Lindsay, Dr. [illegible] form, 192
[illegible]
Linnean Society, 1690
[illegible]
manufacture of serum, 1619
[illegible] 133, 202, 267, 343, 384,
[illegible]
1617
Liver, Pancreas, and Suprarenal Capsules, Diseases of the (*Nothnagel's Encyclopædia* of Practical Medicine) (review), 1283
Liver, primary sarcoma of the, 1429, 1503

Liverpool Medico Chirurgical Journal (review), 1062
Liverpool, recent epidemic of small-pox in, 181
Liverpool School of Tropical Medicine, annual report of, 834; and trypanosomiasis, 1737; and the Alake of Abeokuta, 1822; appeal for funds, 1822
Liverpool University Faculty of Medicine, 767

LIVERPOOL, CORRESPONDENCE FROM.—Sleeping-sickness, 126, 543, 1690, 1822—Infectious diseases in Liverpool, 126—Prevention of malarial fever, 126, 689, 1690—Scholarship in dermatological research, 126—Demolition of insanitary areas in Liverpool, 260—University of Liverpool: corporate grant, 260, 543—Chair of physical chemistry, 1690—New fellowship, 689—Diploma in public health, 960—First degree ceremony, 960—New chair of physical chemistry, 1539—Midwives Act, 1902, and Liverpool ladies' charity, 260—Hospital Sunday collection, 260—Southport's low death-rate, 260—Liverpool Royal Infirmary, 399, 834, 1538, 1690—David Lewis Northern Hospital, 399—Hospital rating, 399—Infirmary for children, 399, 1084—Preservatives in marmalade, 399—City coroner's report for 1903, 399—Liverpool Medical Institution, 400—New horse disease, 400—Royal Southern Hospital, 542, 1238—Hospital Saturday Fund, 543, 1539—Liverpool boards of guardians and consumption: severe criticism of the Heswall scheme, 689—Liverpool and malaria at Ismailia: complimentary luncheon to Prof. R. W. Boyce, 689—Liverpool School of Tropical Medicine: a year's results, 834; visit of the Alake of Abeokuta, 1822; appeal by, 1737, 1822—Small-pox in Liverpool, 834—Tribute to the late Dr. Alexander Davidson, 834—Liverpool Chamber of Commerce appointment for Professor R. W. Boyce, F.R.S., 960—Presentation to Dr. Thomas Clarke, J.P., 960—Health committee and vaccination, 961—Cheshire Hospital scheme, 961—Work of the port sanitary authority during 1903; Liverpool and sea-borne infectious disease, 1083—Birkenhead Infectious Diseases Hospital, 1083—The Harveian Oration at the Royal College of Physicians of London, 1084—Sanitary inspectors' examination board, 1084—Anthrax in Cheshire, 1084—Infantile mortality in Liverpool artificial foods and the [illegible] Health Students' [illegible] ern Hospital [illegible] city analyst, 1238—Liverpool cancer research, 1383—Roentgen rays department at the Royal Southern Hospital, 1383—Health of Liverpool, 1383, 1539—Death of Alderman John Lawrence, J.P., 1383—Liverpool baths and workhouses: opening of a new bath, 1383—Royal College of Physicians of London, 1384—Linnæan Society, 1690—St. Helen's sanatorium, 1690—West [illegible] accommodation for [illegible] Health of Bootle for [illegible] Asylum, Lancaster, 1823

Living beings, chemical constitution of, 1085
Livingstone College, Leyton, 1587
Llandaff and Dinas Powis health report, 1312
Lloyd, Mr. C F, 514
Lobar pneumonia, a case of, 160; 70 cases of, 496
Local anæsthesia produced by the injection of water, 452
Local Government Board, the president of and Mr Shirley Murphy, 449; and the question of vagrancy, 668; reports of medical officers of health, 747 828; and the fees of public vaccinators, 1067; expenditure on the medical department of, 1091, position and duties of the, 1802
Local Government Board of Ireland, annual report of the, 1240
Local Government Board for Scotland and small-pox, 673
Lockwood, Mr. C. B., aseptic surgery in theory and practice and the treatment of operation wounds, 815; early diagnosis of tumours of the bladder, 1633
Locomotives, street, 388
Locum-tenent and his principal, 1093
Lodge, Sir Oliver physics applied to medicine, 893, 1731
Lomax, Mr. Montagu, Frondes Caducæ (review), 473
London (see also Metropo[illegible])
[illegible] ness and mortality in, [illegible] 1233, 1529 1747; during [illegible] also Vital Statistics)
[illegible] Medical Protection Society, annual general meeting of, 673, 826, and medical defence, 1065
London Charities, Herbert Fry's *Royal Guide to the* (review), 442
London Conjoint Diploma and the London Licentiates' and Members' Society, 597
London county asylums, annual reports of: Claybury, 746; Colney Hatch 746; Hanwell, 747; Bexley Heath, 955; Horton, 956; The Manor, Epsom, 1076
London County Council and Dr. Freyberger, 444; and Mr. Walter Long, 449; and the Midwives Act, 527; and the notification of chicken pox, 1011; and the Metropolitan Street Ambulance Association, 735, 1365
London, county of, report of the medical officer of health of, 171, 385, 456, 586
London Hospital, flower show in aid of the, 1742
London Hospital Medical Club, 405
London filtered water, bacteriological examination of the, 1300
London hospitals and central control, 125, 186, 254, 333
London Licentiates' and Members' Society and the London Conjoint Diploma, 597 (see also Medical diplomates, Society of London)
London medical education, future of (Sir Isambard Owen), 1399, 1435
London, medical men in, in the year 1822, 1801
London medical students, the old hardship of, 1293, 1460, 1536, 1688
London Ophthalmic Infirmary in 1826, 1374
London Post Graduate Association, 1396
London (Royal Free Hospital) School of Medicine for Women, 1743
London School Board, annual report of the school management committee, 133; a retrospect of the, 1293; annual report of the medical officer, 1813
London School of Tropical Medicine, pass lists, 45, 1168; students entered, 319; Craggs's research prize, 597; appointment, 1810
London, small-pox in, 1246, 1247, 1318
London, street ambulances for, 377, 592, 735, 821, 947, 1072, 1301, 1365
London thoroughfares, 519
London University and medical education, 55; medical degree of, 597; Institute of Medical Sciences, 112, 249, 527, 604; and the Royal College of Science, 1584; lectures, 1628
London, vital statistics of, monthly, 183, 184, 1459, 829, 1232, 1529, 1746; during 1903, 748, 1514; weekly (see Vital statistics, weekly, health of English towns)
Londonderry City and County Asylum, 545
Long, Mr. Walter, and the London County Council, 449; and vagrancy, 668
Longden, Dr. D. C., obituary, 475
Longley, Mr. Thomas, the late, His Majesty's heaviest subject, 695
Looking back, 48, 112, 182, 238, 310 387, 458, 528, 598, 677, 745, 812, 879, 954, 1013, 1063, 1147, 1214, 1303, 1374, 1434, 1527, 1590, 1675, 1744, 1801, 1815
Lorand, Dr. Arnold, pancreas, thyroid, and diabetes, 1820
Lord, Mr. S. T., functional nerve troubles, 163
Lorenz, Dr, and dislocations of the hip, the value of his treatment, 403
Love a disease, 818
Low, Dr. C. W., 480
Low, Dr G. C, filaria perstans and the genus tylenchus (Bastian), 420, 752
Low, Dr. R. Bruce, small-pox in Germany, 1135
Low, Dr. V. Warren, extreme atrophy of testicles, 424; perforated gastric ulcer with appendicitis, 1769
Lowestoft, report of the medical officer of health of, 1375
L.S A.s, the older and surgical fees, 695
Lubbock, Mr. E. A., the general practitioner and the consultant 334
Lubeck and its police regulations regarding unqualified practitioners 1008
Lucas, Mr. Albert, injury to the right shoulder, 876
Lucas, Mr. R. Clement, two cases of "corset cancer," with remarks on the origin and spread of cancer, 929
Lucas-Championnière, M., motorists' fractures, 952
Lucerne, Congress of Ophthalmology at, 858
Luft, Dr. A. P., and the Home Office 1811
Luftwege, Oberen, Die Krankheiten der (Prof. M. Schmidt) (review), 371
Luke, Dr. T. D., nitrous oxide administration and a case of danger, 479
Lumbar puncture in diseases of the ear, 128; treatment of urinary incontinence by, 1466; primary cerebral actinomycosis diagnosed by, 1585
Lumbricosis in the colonies, 1314
Lumleian lectures, 1477, 1554, 1636
Lumley mixture, 35
Lunacy (see also After-care and Medico-Psychological Association under MEDICAL SOCIETIES)
Lunacy Acts amendment of the, 1438, 1472, 1517, 1544; alleged violation of the, 1544
Lunacy administration and Sir John Batty Tuke, M.P, 589, 1438, 1469
Lunacy and intoxication, 1763
Lunacy Commission, the English, alleged inadequate constitution of the, 1469
Lunacy Department, New South Wales, 174
Lunacy, General Board of, in England and Wales, 904
Lunacy in the United States, 618; in Scotland, 1385; in Bengal, 1754
Lunacy, the law of, muddle of, 612
Lunatic, an alleged, action at law by, against medical men, 605
Lunatic Asylum, the Egyptian, 130; striking a patient in a, 1621
Lunatic asylums, soldiers and sailors in, 1247
Lunatics, certification of, 244, 1796; illegal detention of, 312; care of, in Ireland, 549, 1170; in Bengal, 1754; harmless, accommodation for, 1822
Lunatics, Pauper, the *Law relating to* (Mr. Sydney Davey) review), 1209
Lund, Dr. Kenneth F., myelopathic albumosuria, 1045
Lung, reflex of Abrams, 51, 125, 189, 253
Lung, secondary angeio-sarcoma of the, 726
Lung, the left, massive form of consolidation of (Dr T. J. Horder), 801
Lung, waterlogging of (so-called), 439
Lungs, abscess of, 403; physiology of the, contributions to the, 1002
Lunn, Mr. J. R, tuberculosis of the choroid, 268; compression of the retinal veins, 801
Lupus, associated with lichen scrofulosorum, 657
Lupus, etiology of, and treatment by the x rays and Finsen light, 503, 874, 997, 1659
Lying-in hospitals, mortality in, 1774
Ly[illegible] the x rays, 1536
Ly[illegible] the preparation of, [illegible] y of, 1695; *versus* [illegible] 8
[illegible] of the, 1403
[illegible] and malignant
Lymphosarcoma, 1407
Lynton and Lynmouth, water-supply of, 1694
Lyon, Dr. T. Glover, sanatorium treatment, 1242
Lyons, a visit to, 1611

M

"M," substitution unmasked by, 44, 107, 136
Macara, Dr. J. F. D, 177, 263
McBride, Dr. P., new surgical instruments, 807, otitic cerebellar abscess, 1725
MacCallan, Mr. A. F., Cassel fund to fight ophthalmia, 1242
Macclesfield Burial Society and its medical officers, 1459
McCrindle, Dr. J. D., 758
McCulloch, Col. T. C. (R.A.M.C.), sleeping sickness, 233
Macdonald, Dr. Ian, hysterectomy for cancer of the uterus coexisting with pregnancy, 866
McDonald, Dr. Stuart, general streptothrix infection, 437, 1062; delayed chloroform poisoning, 1657
MacDonald, Dr. Mackay, post-turbinal snare, 1133
Macdonald, Inspector Gen. Sir John, and the Royal Naval Hospital, Haslar, 1076
McDonagh, Mr James, female nurses and male patients, 1698
MacDougall, Mr J. A., use of morphia in severe cerebral injury, 1785
MacEwan, Prof. D., abdominal operations, 1127
Macewen, Dr. J. A. C., suppurative mastoiditis, 1127
McFarland, Prof. J., *Pathogenic Bacteria* (review), 1663
Macfie, Mr. Ronald Campbell, *New Poems* (review), 1132
McGavin Mr. L. H., removeable deep suture for the prevention of stitch sinuses, 1115
McGill University Medical Faculty, 902
McGregor, Dr. A. N., exhibition of cases, 875; chronic neurosis, with pain, swelling, and hæmorrhage, 1039; surgical dressing materials, 1209
McIlroy, Dr. A. Louise, Fallopian tubes, 440
Mackay, Mr. W. A, hysterectomy for cancer of the uterus coexisting with pregnancy, 866
Mackellar, Mr. A. O., death of, 1743
McKenzie, Dr D, ulcerative stomatitis after measles, 1007
Mackenzie, Dr. H. W. G., early diagnosis of perforation in typhoid fever, 1071

Mackenzie, Dr. W. L., Medical Inspection of School Children (review), 1508
Mackie, Lieut. F. Percival, I.M.S., antistreptococcic serum in scarlet fever and diphtheria, 493
Mackintosh, Mr. J. S., the Pied Piper of Hamelin, 970
Macknight, Mr. T. M., Food for the Tropics (review), 811
Maclean, Dr. Hugh, cardiac disease, 544
McLean, Mr W., declining birth-rate in Australia, 1388
Macleod, Colonel Kenneth, I.M.S., child [illegible]
[illegible] s of the [illegible]
[illegible] -General [illegible] death of, 607
McNab, Dr. A. A., puerperal eclampsia, 558
Macnaughton-Jones, Dr. H., aseptic cap for the mouth and nose, 581; dangers of pessaries, 1126
McPhail, Mr. James, tuberculosis in dairy cows, 455
[illegible]
Maiden, Mr. J., plants which induce eczema, 1208
Main, Mr. Robert, cough and distension of the bladder, 432
Makins, Mr. G. H., the late Fleet-Surgeon Kirker, R.N., 55; intestinal obstruction, 156; ambulance service, 1503
Malaga as a winter resort, 258
Malaria (see also Anti-malarial)
[illegible]
Malcolm, Mr. John D., uterine fibro myoma, [illegible]
[illegible] de Santi), 1710
Malignant disease treated with the x rays, 872 (see also Cancer)
Malignant growths and normal reproductive tissues, 55, 187, 251, 396, 463, 752
[illegible]
Malvern Poor law conference at, 1554
Mammary cancer treated by oophorectomy, 145
Man, a heavy, 695
Ma[illegible]

and friendly societies,' 338—New small pox hospital, 338—Brandy and British brandy, 338—The late Mr William Crosby, 338—[illegible] 899—Country schools for town children, 899
[illegible] 1311—[illegible] ndard, [illegible] puri[illegible] cuted, 1464—[illegible] 1464—[illegible] stem, [illegible]—Lan[illegible] ulance work, 1615—Manchester cripples, 1755 Home treatment of scarlet fever, 1755—"Rushing motor cars," 1755—Measles in Didsbury, 1756—Homes for epileptics and inebriates at Langho, 1756—Bequests, 1756
Manchester, milk-supply of, 41; port sanitary authority, 63; Heaton Park, 247; street ambulances for, 947, 1615; [illegible] suicides in, 1621; Victoria University, chair of pathology in, 1068; new St. Mary's Hospital, 1093
Manchester Medical Guild and the British Medical Association, 1307
Manchester, Medical Schools in, Rise and Progress of (Mr. F. W. Jordan) (review), 1730; Infirmary, Honorary Medical Staff of the, [illegible] Dr. E. M. [illegible] pital, 548, [illegible] dent Dis-[illegible] ile) with [illegible] 62 [illegible] ptoms of [illegible] (Mr. C. [illegible]
Manson, Sir Patrick, sleeping sickness, 232; beri beri and water-cress, 521; disease problem in the West Indies, 707, 826
Manual treatment in typhoid fever and diphtheria (Dr. E. F. Cyriax), 233
Maps, street, for public reference, 203
Marchand, Prof. F., trypanosome infection in man, 149
Marey, Prof. Etienne, death of, 1446; obituary, 1530
Margarine and butter, 1807
[illegible] m, [illegible] 49, [illegible]
Marriage, Mr. H. J., attempt to divide the [illegible] relief [illegible]
Marriages, undesirable 129.
Marriott, Mr. Edward Dean, 125
Marsh, Prof. Howard, pneumococcal peritonitis, 159; Hunterian lecture (joints and deformities), 1446, 1549; hydrarthrosis, 1667
Marsh, Mr. J. Hedley, Vaccination and Anti vaccinators (review), 308
[illegible] 375 [illegible] toneal [illegible] from [illegible] nt for [illegible]
Marshall, Major J. J. de Zouche, Stretcher Drill Illustrated (review), 1650

Martin, Dr. C. J. (F.R.S.), causation of small-pox, 1296
Martin, Dr. J. Middleton, schools and infection, 1563
Martin, Mr. Alfred J., Martin's Up to date Tables of Imperial, Metric, Indian, and Colonial Weights and Measures (review), 1213
Martin, Mr. L. C., vaginal tumour during pregnancy, 25
Martin's Up-to-date Beginners' Table book [illegible]
[illegible] copœia [illegible] arides, [illegible]
Maryland, the Medical Annals of, 1799-1899 (review), 659
Mason, Dr J. Wright, tuberculosis in dairy cows, 455
Masonic Lodge, Middlesex Yeomanry, 1305
[illegible] making [illegible] of the [illegible]
Mather, E., Bogus American University, 969
Matheson, Mr J. Kennedy, glandular fever, 192; salicylic acid poisoning, 432
[illegible] in Canada, raising the [illegible]
Maxim ale, 34
Maxwell, Dr. Theodore, colours of printing inks on placards, 204
Maxwell, Sir Herbert, Bill to amend the law relating to the sale of whisky, 816
May, Dr C. Gould, multiple exostoses, 655
May, Dr W. Page, tracts of the brain, 1299
[illegible] able-[illegible] ery, [illegible] shot-[illegible]
Mav[illegible] rize, 1146; retina and optic nerves in anencephaly, 1354
Meachen, Dr. G. Norman, simultaneous cutaneous lesions, 54
Meade, Mrs L. T., Nurse Charlotte (review), 1001
Meal Poke, The, University of St. Andrews, [illegible]
[illegible] diseased, exposed for sale, [illegible]; raw, diet of, 1352
Meath Hospital and County Dublin Infirmary, 1385, 1393
Mecca, Indian pilgrims to, quarantine for, 1018, 1087
[illegible]
Meckel's diverticulum, [illegible] intussusception originating in, 505; lecture on, 1412
Medals, the wearing of, by ex civil surgeons, 346, 1663

MEDICAL SOCIETIES

ABERDEEN MEDICO-CHIRURGICAL SOCIETY.—Exhibition of cases 303
ABERDEEN UNIVERSITY MEDICAL SOCIETY.—Treatment of scoliosis 302—Homœopathy, 441
[illegible] Exhibition of cases [illegible]

Bradford Medico-Chirurgical Society.—Hydatid cyst, 29—Causation of cancer, 658—Humanised and sterilised milk in the feeding of infants; Treatment of gonorrhœa in the male, 939—Medical customs of the Tibetans, 1282

Bristol Medico-Chirurgical Society.—Exhibition of cases and specimens, 236, 874, 1128—Exhibition of specimens, 512

British Balneological and Climatological Society.—Physical therapeutics, 369—Some aspects of obesity, 876, 1206

British Electro Therapeutic Society.—Annual exhibition and conversazione, 63—Persistent sinus of the abdomen after appendicitis, 1573

British Gynæcological Society.—A source of infection during operations, 235—Early rupture of a tubal gestation, 581—The Vernon-Harcourt inhaler, 805—Hydrometra; Exhibition of specimens, 1125, 1507—The dangers of pessaries, 1507; *Prevention of post-operative ventral hernia*, 1726

British Laryngological, Rhinological, and Otological Association.—Exhibition of cases, 369, 1506—Presidential address; Exhibition of cases and specimens; Latent or intermittent nasal obstruction, 874

Chelsea Clinical Society.—Subacute pancreatitis, 658—*Discussion on "internal secretion" in disease and in treatment*, 798 870

Clinical Society.—Pneumococcal peritonitis, 159—Exhibition of cases, 299, 655, 1203, 1572—Fibroid and calculous disease of the pancreas; Malignant anæmia, 508—A case of polycythæmia with enlarged spleen, 802—Intestinal obstruction immediately following *typhoid fever; A case of severe and fatal* hæmaturia of unknown origin; A case of attempted division of the eighth nerve within the skull for the relief of tinnitus, 936—The value of the x rays in the diagnosis of early pulmonary tuberculosis; The x-ray treatment in recurrent cancer of the breast, 1426—A case of pyo pneumothorax treated by resection of ribs; *Two cases of tumour of* the left auricle simulating mitral stenosis; Election of officers, 1572

Dermatological Society of Great Britain and Ireland.—Exhibition of cases, 440, 1128, 1429

Dermatological Society of London.—Exhibition of cases, 510

Edinburgh Medico-Chirurgical Society.—Exhibition of cases and specimens, 28, 1504, 1659—On the treatment of various forms of cutaneous disease by the x rays and light, 161—Acute appendicitis: its diagnosis and the indications for operation, 301—General streptothrix infection; Glaucoma, 437—Electric currents and high frequency; Chronic intestinal obstruction, 724—Tuberculous arthritis in the young, 1355—Anatomy of the pelvic fascia; Anatomy of the enlarged prostate, 1659

Edinburgh Obstetrical Society.—Vaginal Cæsarean section, 234, 1725—Hebotomy; Nephrectomy and exploratory nephrotomy, 580—The late Dr. R. Milne Murray, 805—Obstructed labour; Thyroid relations in obstetrics and gynæcology, 1204—Malignant uterine complications of fibro-myomata; The obstetric satchel: a problem in asepsis, 1428—Tubal abortion, 1725

Edinburgh Royal Medical Society.—Treatment of shock, 236—Submucous fibroid of the cervix uteri, 304—Massage, 370—Anatomical relationships of two double monsters, 440

Epidemiological Society.—Sleeping sickness, 228—Etiology of scurvy, 657—Epidemiology of enteric fever and cholera in Hamburg, 936—Industrial anthrax, 1206—Prevalence of enteric fever in Prussia, 1427

Forfarshire Medical Association.—Municipal supply of sterilised prepared milk, 30—*Surgical treatment of empyema*, 511—Four abdominal operations, 1127

Glasgow Medico-Chirurgical Society.—Lupus; Chloride of ethyl as a general anæsthetic, 997

Glasgow Northern Medical Society.—Suppurative affections of the accessory sinuses of the nose, 580—Diagnosis and treatment of contracted pelvis, 727—Hospital history of Glasgow, 939—Observations on the value of the Widal serum reaction in enteric fever, 1356

Glasgow Obstetrical and Gynæcological Society.—Management of anterior and posterior displacements of the uterus, 30—Vaginal cancer, 440—Intraperitoneal hæmorrhage and hæmatocele arising from tubal abortion or rupture, 875—Exhibition of specimens, 997, 1573; Ulcer of the stomach; Ventro-fixation for the relief of uterine prolapse and retroflexion, 997—Recurring eclampsia; Hydrocephalus with post-partum hæmorrhage; Primary carcinoma of the ovary, 1282; Election of office bearers, 1618

Glasgow, Pathological and Clinical Society.—Exhibition of specimens and cases, 235, 511, 875, 1209—Chronic lymphatic leukæmia, 1429

Glasgow Southern Medical Society.—Normal saline baths, 29—Abdominal surgery, 807—Alcohol in medicine, 1058—Suppurative mastoiditis, 1127—Exhibition of specimens, 1428—An early diagnosis: its limitations, 1660

Harveian Society.—Appendix abscess in the recto-vesical pouch, 509—Exhibition of cases, 656, 1205—The diagnosis of pulmonary tuberculosis in infants and young children, 805

Hunterian Society.—Pain and its importance in diagnosis and tendency to mislead, 234—Exhibition of specimens, 370—Election of officers, 581—Physiological action of the *Nauheim* springs, 938—Exhibition of cases, 1126

Incorporated Society of Medical Officers of Health.—Sophistication of foods, 162

Kidderminster Medical Society.—Exhibition of specimens, 439, 1573

Laryngological Society.—Officers elected, 216—Exhibition of cases, 302, 510, 807, 1128

Leeds and West Riding Medico-Chirurgical Society.—Treatment of tuberculosis by Beraneck's tuberculin, 160—Concealed accidental hæmorrhage; Puerperal eclampsia; Uretero-lithotomy, 368—Ruptured bowel; Acute inversion of the uterus; The causation of cancer; Exhibition of cases and specimens, 873—*Administration of prophylactic injections* of antitoxin to persons who had been exposed to the infection of diphtheria, 1207

Liverpool Medical Institution.—Congenital hydronephrosis, 163—The modern surgery of the prostate, [illegible] and lead; Pue [illegible] bition of specimens, 512, 1207—Perforating *ulcer of the stomach; The treatment of* malarial fever; The treatment of placenta prævia, 579—Tuberculous ulceration of the mouth and of the pharynx; Value of the x rays in the treatment of malignant disease; Infantile mortality and the supply of humanised sterilised milk, 872—Exhibition of specimens; Carbon monoxide poisoning from coal gas; Purin bodies and their metabolism, 938—Carcinoma of the œsophagus: gastrostomy; Excision of the Gasserian ganglion, 1124—Strangulated inguinal hernia; Partial enterocele, strangulated; The treatment when certain foreign bodies have been swallowed; Digestants; Interpretation of physical signs in pleural empyema, 1280

Manchester Clinical Society.—The treatment of severe cases of accidental hæmorrhage, 27—Tuberculous affections of the face, 304—Uræmia, 727

Manchester Medical Society.—Treatment of rectal prolapse, 440—Effect of decapsulation on kidneys, 807—Observations on the treatment of neurasthenia, 1127

Manchester Pathological Society.—Exhibitions of specimens, 304, 1209—Idiopathic endometritis, 512—Primary sarcoma of the liver, 1429

Medical Society of London.—The use of serum and other inoculations in pyogenic infections, 158—Pelvic lesions in relation to abdominal diagnosis, 303—Exhibition of cases, 434, 1056—Progressive paralysis of the insane; Brachial neuritis, 578—Discussion on acute intestinal obstruction, 800—The treatment of urinary tuberculosis, 935—Prevention and early treatment of disease; A case of perityphlitis simulating malignant disease, 1203—A study of a case of rheumatic fever; The influence of early operation on the mortality *and results of appendicitis*, 1352

Medico-Legal Society.—Homicide by the introduction of foreign bodies, 581—"Suicide whilst temporarily insane"; Anomalous differences in the methods whereby a lunatic was certified for detention; Weight to be attached to medical evidence, 1796

Medico-Psychological Association.—Saline injections in certain acute cases of mental disease, 1126—Quantitative and qualitative leucocyte observations in various forms of insanity; Social causes of alcoholism; Combined spinal degeneration with unusual mental symptoms, 1503

Midland Medical Society.—Exhibition of cases, 439, 581, 876—Diagnosis and treatment of the intracranial complications of middle ear disease, 876

Newport (Mon.) Medical Society.—Exhibition of cases, 658—The value of venesection in over distension of the right side of the heart, 997

North London Medical and Chirurgical Society.—Recent methods of inducing anæsthesia, 303—Exhibition of cases, 874

North of England Obstetrical and Gynæcological Society.—Chronic endometritis and chronic metritis in virgins, 303—Fibro-myoma uteri treated by abdominal hysterectomy; Infected myoma of the uterus with severe toxæmia treated by abdominal hysterectomy; Amenorrhœa associated with serious eye symptoms; Encysted perimetritis, 875—Epithelioma of the clitoris; Ruptured tubal pregnancy, 937—"Habitual" and incomplete abortion, 1281

Obstetrical Society.—Fibro-myoma of the uterus; Pyometra in a subseptate uterus; Abscess in the wall of the uterus, 227—Unruptured tubal pregnancy; Election of officers, 436—The site of impregnation; Abdominal hysterectomy, 803—Puerperal eclampsia treated by thyroid extract; Torsion of the pedicle in hydrosalpinx, 1057—Sarcomatous fibro myoma; Hæmatoma and hæmatocele, 1353—Exhibition of specimens; Hydatid disease in the abdomen and pelvis, 1657

Ophthalmological Society.—Exhibition of cases, 27—Proptosis; Asthenopia; Rheumatoid arthritis; Tuberculosis of the choroid, 367—Gonorrhœal conjunctivitis and hydrogen peroxide; Congenital anterior staphyloma, 578—Exhibition of cases, 801, 1724—The retina and optic nerves in anencephaly; Trachomatous pannus and its associated corneal changes; Trichiasis and the operation for its relief, 1354—Primary optic atrophy due to lead; Optic atrophy after post partum hæmorrhage; *Optic glioma*; Microphthalmos, 1724

Otological Society of the United Kingdom.—Intr[illegible] and treatm[illegible] 805—Otitic [illegible] rium, 1725

Pathological Society.—The staphylococcus *aureus and rheumatic fever; Dermoid* tumours of the brain; Racemose aneurysm of the brain; Pulsating exophthalmos with aneurysms of the internal carotid; Epithelioma of the cervix treated by passive immunisation therapy of Dr. Otto Schmidt, 95—Researches on the morphology of an organism associated with carcinoma mammæ and the etiological significance of the association, 226—The organisms of monkey malaria and sleeping sickness; Agglutination, iron hæmatoxylin staining, 434—Discussion on arterial sclerosis, 506—The action of adrenalin on the metabolism of the bird; A survey of the recorded cases of hæmatoporphyrinuria not due to sulphonal, 654—Recent experimental work on bacillary dysentery; Deep chromatin staining in malaria; An unusual anatomical lesion, 800—Comparative examination of the blood and urine; Case of climatic bubo, 1123—Sarcoma of the pancreas associated with pseudolipæmia; Experiments on ankylostoma larvæ, 1280—The glomerular lesions of diffuse nephritis; Malignant growths; Primary sarcoma of the liver in an infant; sarcoma of the alimentary canal; Leukanæmia, 1502; meeting of the Lister Institute, 1810

Plaistow and Canning Town Medical Society.—Election of officers, 304

Rochdale and District Medical Society.—Functional nerve troubles, 163—Remedies used in ophthalmic work; intestinal obstruction, 876

Royal Academy of Medicine in Ireland.—Pelvic fascia, 438—Public health problems; Modern education, 655—Exhibition of specimens, 726, 997—Milk, 873—Poisoning by coal gas and carburetted water gas; Duties of medical men at coroner's inquests, 1427

Royal Medical and Chirurgical Society.—Hypertrophic pulmonary osteo-arthropathy, 157—Hour-glass stomach, 298—Anæmia pseudo leukæmica infantum, 433—Paralysis agitans, 510—Observation on metabolism in the febrile state in man, 577—The cardiac dulness in cases of cancer; Properitoneal hernia, 724—Surgical anatomy of the normal and enlarged prostate and the operation of *prostatectomy*, 869—*The mental condition in* epilepsy in relation to prognosis; Peptic ulcer of the jejunum; Carcinoma of the rectum, 1056—The economic value of the sanatorium treatment for the working classes based upon after-histories, 1201—The effects of a proteid dietary (raw meat); The limitations of leucocytosis as a sign for operation in appendicitis, 1352—Notice of meeting, 1523—On the elasticity of the aorta, being a contribution to the study of arterial sclerosis, 1571—Protracted and recrudescent infection in diphtheria and scarlet fever, 1724

1125
SOUTH-WEST LONDON MEDICAL SOCIETY.—

THERAPEUTICAL SOCIETY.—Action of Drugs on the pulmonary vessels, 163—Some new discoveries respecting cancer, 269—Inguinal

WEST KENT MEDICO CHIRURGICAL SOCIETY—Surgical treatment of appendicitis, 511—Treatment of disease by animal extracts and serums 1127

Assoc.)
Medical attendance on army officers, 1818
Medical benevolent (see also LANCET, THE, Relief Fund)

Medical clerks, civil service examinations for, 691

(Dr. H.
n), 1065; a

Medical defence and the British Medical Association, 667, 1065, 1439 1445, 1452, 1518, 1576

7, 1065, 1209,
346, 408 482,
71 1027, 1095
46, 1622, 1698

Medical Diplomates Society of London, (formerly London Licentiates and Members Society), 1234

India, 1821
Medical Electrology and Radiology (review), 811, 1133
Medical ethics (Dr. D. Lloyd Roberts), 1180
Medical etiquette v legal 970
Medical excursions to French watering-places, 1674

1249
3
yclinic.

267, 343,
Lieut.-Col.
1091, 1469,

Medical man, a brave (Dr. H. R. Letcher), 765
Medical man, the coroner and the pathologist, 444
Medical matriculation, raising the standard of,

200. 338,
of, 595; an immense tract of land without, 1026; German, abroad, 1241; making of, by Act of Parliament, in Quebec, 1761; insurance of, 1811
Medical men, eminent foreign, deaths of (see Deaths, &c); honours to (see Medical Profession)
Medical men, French, visit of, to London, 1742; fees for the treatment of relatives of, 1758; in Paris, in the year 1822, 1801
Medical men, unfounded criminal charges against, 894, 1825

314
Medical Officers of Health, Incorporated Society of, 614, 951
Medical officers of health, reports of 747, 823, 1078, 1374
Medical officers of health, fixity of tenure for, 1229 1306, 1377, 1378 1535
Medical officers of the Guards, 751
Medical officers of the Macclesfield Burial Society, 1459
Medical officers of the Metropolitan Asylums *Board and the managers of the Board*, 177, 252, 378, 540, 670, 950, 1077
Medical practice, a Russian medical man on,

Medical profession, the public and the,

1223, 1445, 1742
Medical profession and the dispensing of medicines, 242, 251, 332, 392, 463, 539, 608, 665, 686, 1008, 1749
Medical qualifications in Germany, 963

Medical schools in Switzerland, attendance at, 763
Medical Sciences, Institute of, 112, 249 527, 605
Medical Society of London, anniversary dinner of, 456, 673, 734, oration by Sir

New York
American
of the,

Medical specialists in Germany, 1241

Medical witnesses, payment of, 695; allowances to, 840, 1011, fees of, 473
Medicaments, impregnating parts of the body with, 903
Medication, self, 944

Corporal punishment and crimes against women, 358—*Corporal punishment in board* schools, 389—Jurisdiction of magistrates in cases of "conscientious objection," 444—A point under the Public Health Acts, 444—*The medical man, the coroner, and the* pathologist, 444—Medical privilege and the police, 535—The legal test of insanity, 536, 616—An action for negligence in the application of the Roentgen rays, 536—An action against medical men in Ireland, 605—Lead in cream of tartar, 606—Litigation over the sale of a practice, 606—The legal claim for

Medicine and Hygiene, Latin-American Congress of, 257, 1153; Medicine, Fifteenth International Congress of, 1521, 1586
Medicine, a Manual of (review), 305
Medicine, a Narrative of, in America (review), 306
Medicine, alcohol in (Dr. T. K. Monro), 1058; metric system in, 1734; mixed classes in, 1756
Medicine and medicine God of the Egyptians (Dr R. Caton), 1769
Medicine, the Practice of (Prof. J. M. Anders) (review), 1209
Medicines, the dispensing of, and the medical profession, 242, 251, 332, 392, 463, 539, 608, 665, 686, 1008

of Great
Sanitary
the Year
1901, 683
Meehan, Mr. N. J., 605
Meeting of general practitioners in the year *1826* 677
Melbourne hospital, 1825
Meldon, Mr. Austin, obituary, 1315
Melland, Dr. C. H., recurrent cases of malaria, 440

Mental disease, certain acute cases of, value of saline injections in, 1126
Mental disease, the relation of inebriety to

Mental symptoms associated with pernicious anæmia 1803
Menzies, Dr. J A, remedies used in ophthalmic work, 879
Mercy and Truth (review), 878, 1731
Merklem Dr. Pierre, dropsy, 735; lead paralysis, 1143

the frontal

Mesenteric cysts (Dr. E. P. Baumann, 1272 (Prof Murdoch Cameron), 1573
Mesentery, *dermoid cyst of the* (Mr. J. Basil Hall, 1344
Mesopotamia and Persia, cholera in, 1153, 1537, 1812
Mesorchium, pedunculated, torsion of a, strangulation of the fully descended testicle from, 1782
Mesotan, 594
Messiter, Mr. A. F, Nelson as a patient, 664
Metabolism in the febrile state in man (Dr. G. C. Garratt) 577
Metabolism of the bird, action of adrenalin on, 651
"Metbain" cover, 1545
Meteorological daily readings, 67, 137, 205, 270, 347. 408. 483, 552, 626, 696, 771, 847, 906, 971, 1026, 1095, 1173, 1251, 1321, 1397, 1475, 1547, 1623, 1699, 1767, 1833

Methyl alcohol, toxic amblyopia caused by, 383
Metric System, 622, 693, 1213, 1734
Metritis and cellulitis in the puerperium treated with antisteptococcic serum (Dr. J. W. D[illegible]
[illegible] London)
[illegible] Board, and its assistant [illegible], 252 378, 540, 670, 930, 1077; and ringworm, 318, 693; and the supply of coal, gas, or electricity, 1144; and vivisection, 1392
Metropolitan Hospital Sunday Fund, composition of committees of, 193; and Mr. George Herring, 1372; annotation concerning, 1581; THE LANCET special supplement in support of the, 1625—1632; leading article on, 1665; letter from Sir J. T. Ritchie, Lord Mayor, 1684; lists of donations, 1745, 1817
Metropolitan Street Ambulance Association, 377, 592, 735, 821, 947, 1072, 1223, 1301, 1365, 1380, 1584, 1610
Mexico and yellow fever, 691
Mian Mir (Punjab), anti-malarial operations at (Dr. J. W. W. Stephens), 637
Microbes, Pathogenic (Dr. P. Jousset) (review), 1000
Microphthalmos, two cases of, 1356
Microscopic (see also Ultra microscopic)
Microscopic image and vertical illumination, 673; compounding draw-tube and oscillating screen, 1815
Microscopical Science, Quarterly Journal of (review), 33
Mid Cheshire hospital scheme, 1464
Middle-ear disease, intracranial complications of, 876
Middle-ear, sclerosis of, 84
Middle-ear suppuration, complicated, analysis of 691 cases of, 805
Middlesex, a sanatorium for consumptives for, 1794
Middlesex County Council and the appointment of a county medical officer, 384
Middlesex Hospital, annual court of governors, 692; festival dinner in aid of the funds of, 1072, 1248
Middlesex Yeomanry (Masonic) Lodge, 1305
Midland Counties Asylum at Knowle, 1614
Midland Counties Home for Incurables, 337
Midland Medical Union, 132
Midwifery (see also Geburtshulfe)
Midwifery, the practical teaching of, in America, 520
Midwifery training, Irish, and the Central Midwives Board, 401, 449, 457, 524
Midwives Act, 1902; and Irish training institutions, 181, 34), 401, 449, 457; responsibilities under the, 304; administration of, in Cardiff, 338, 899; in its bearing upon the work of general practitioners, 356; and the London County Council, 527; and the Royal College of Surgeons of England, 535; administration of, in Glamorgan, 690, 1756; in Lancashire, 1370
Midwives, Association for the Training and Supply of, 591, 1543
Midwives Board (see Central Midwives Board)
Midwives, district, proposed national training school for, 837
Midwives in Italy, 113
Midwives in the rural districts, 387
Midwives in workhouses, 452
Midwives' petition in Zurich, 1161
Mignon, M., meningitis following fracture of the base of the skull, 1314
Mikulicz, Prof. von, abdominal surgery, 1309
Miles, Dr. A., traumatic hæmatorrhachis, 670
Miles, Mr. U. W. N., 396
Military dentistry, 1377; surgery, 1799
Military hospital reforms, 894
Military medical intelligence, and the direction of military operations, 1150
Military stations, nurses in 1695
Military training, compulsory, 1581
Milk, for infants and invalids, 35; and tuberculosis, 107; its Production and Uses (review), 307; a preparation of (yoghourt), 546; the preservation of, 546; concentrated, boric acid in, 618, 764; formalin in, 613; coloured, 1158; the standard for, 1463; albumenised humanised, 1512; for out relieved children, 1329
Milk, Bacteriology of (Mr. H. Swithinbank and Dr. G. Newman) (review) 727
Milk, chemical tests of (Dr. Walter G. Smith), 873
Milk, consumption of, in the Woking urban district, 1078
Milk, disease due to outbreak of, at Finchley, 839; at Gloucester, 1616
Milk, humanised and sterilised, and infantile mortality, 872 1237; in the feeding of infants, 939; human and bovine, 1731
Milk, purity of, 693; adulteration of, 1695
Milk-pox, Kaffir (Dr. W. L. de Korte), 1273
Milk-supply of Manchester, 41; of Finsbury, 628; and vivisection, 1145; of Liverpool, 1237
Milk-supplies, cleanliness of, 127; medical officers of health and, 693
Millard, Dr. C. Killick, borderlands of infectious diseases, 53
Miller Hospital, bequest to, 201
Miller, Dr. D. J. M. tapeworm in a child, 1751
Miller, Dr. H. P., eye diseases, 581
Miller, Mr. Leslie, muscle and nerve rays, 526, 610, 685, 831, 1150
Milligan, Dr. G. C., obituary, 475
Milligan, Dr. W., suppuration of the labyrinth, 416, 805
Milroy, Dr. J. A., and Prof. T. H. Milroy, Practical Physiological Chemistry (review), 513
Milroy lectures, 1701, 1772
Milward, Dr. James, retirement of, 261
Minchin, Prof. E. A., sporozoa in relation to disease in man and animals, 736, 889, 950, 1009, 1296, 1371
Mind, the human, the study of (oration by Dr. Haslam in 1826), 812
Mineral springs and baths in Algeria, 1524
Mineral Springs and Climate, Therapeutics of (Dr. I. Burney Yeo) review), 1358
Mineral water of Kara-hissar i Sahib, analysis of, 953
Mineral waters, natural, some points concerning, 323; action of, 1371
Miners' anæmia, cause and prophylaxis of, 1313
Miners' phthisis commission for the Transvaal, 810, 1362, 1444, 1471, 1697, 1736, 1763
Mining shafts, disused, 58
Minnesota, University of, typhoid fever and diphtheria at, 763

MIRROR OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

ABERYSTWYTH INFIRMARY AND CARDIGANSHIRE GENERAL INFIRMARY.—A case of unusual fracture of the clavicle (under the care of Mr. R. T. Edwards), 1201
BERKSHIRE ROYAL HOSPITAL, READING.—Two cases of thrombosis (under the care of Dr. Francis H. Hawkins), 795
BIRMINGHAM QUEEN'S HOSPITAL.—A case of an uncommon form of spina bifida (under the care of Mr. W. Billington), 1053
BRISTOL ROYAL INFIRMARY.—A case of triple telescopic intussusception originating in Meckel's diverticulum (under the care of Mr. T. Carwardine), 505
BULAWAYO MEMORIAL HOSPITAL.—(1) A case of interscapulo thoracic amputation; and (2) a case of Cæsarean section (under the care of Mr. W. G. Clark), 366
CENTRAL LONDON OPHTHALMIC HOSPITAL.—Optic neuritis, ocular paralysis, and absence of the knee jerks in a case of chlorosis (under the care of Mr. Ernest Clarke and Dr. C. O. Hawthorne), 1198
DEVON AND EXETER ROYAL HOSPITAL.—A case of intracranial hæmatoma (under the care of Mr. J. Delpratt Harris), 1199—Two cases of actinomycosis (under the care of Mr. C. E. Bell and Mr. J. D. Harris), 1656
DEVONPORT ROYAL ALBERT HOSPITAL.—Perforated duodenal ulcer; operation; recovery (under the care of Dr Alonzo G. Rider), 1425
DURHAM COUNTY HOSPITAL.—A case of double multilocular cyst of the ovaries (under the care of Dr. S. W. Plummer), 1351
EAST LONDON HOSPITAL FOR CHILDREN, Shadwell, E.—A case of diaphragmatic hernia (under the care of Dr. Eustace Smith), 1424
FRENCH HOSPITAL.—Six consecutive cases of disease of the Fallopian tubes (under the care of Dr. S. Sunderland and Mr. Edmund Owen), 991
GOVERNMENT CIVIL HOSPITAL, HONG KONG.—A case of double amputation; recovery (under the care of Mr. E. A. R. Laing), 95—A case of ruptured spleen presenting features of unusual medico-legal interest; splenectomy; death (under the care of Mr. E. A. R. Laing), 1122
GREAT NORTHERN CENTRAL HOSPITAL.—A case of sarcoma of the pleura and lung with consecutive pericarditis and growth in brain and pancreas, presenting unusual clinical features (under the care of Dr. H. W. Syers), 1651
HILLINGDON COTTAGE HOSPITAL.—A case of tetanus treated by the injection of antitoxin (under the care of Dr. A. Charpentier), 1722
LEEDS GENERAL INFIRMARY.—A case in which a gall-stone was removed from the gall-bladder, subsequent development of malignant disease of the gall-bladder; death from suppurative cholangitis (under the care of Mr. R. Lawford Knaggs), 1054
LINCOLN COUNTY HOSPITAL.—A case of total paraplegia due to caries of the middle dorsal vertebræ; costo-transversectomy; complete recovery (under the care of Dr. W. H. B. Brook), 505
LIVERPOOL INFIRMARY FOR CHILDREN.—Four cases of strangulated inguinal hernia in infants aged 17 days, five weeks, four months, and 12 months (under the care of Mr. R. C. Dun) 1591
LIVERPOOL MILL-ROAD INFIRMARY.—Two cases of tubal gestation; rupture; abdominal section; recovery (under the care of Dr. Nathan Raw), 297
LIVERPOOL ROYAL SOUTHERN HOSPITAL.—A case of spontaneous perforation of the intra-pericardial portion of the inferior vena cava. (under the care of Mr. I. McW. Bourke), 723
LONDON HOSPITAL.—23 consecutive cases of operation upon the stomach (under the care of Mr. C. W. Mansell Moullin), 92
MANCHESTER ROYAL INFIRMARY.—A case of cicatricial pyloric obstruction; pyloroplasty; hæmatemesis from a second ulcer; operation; recovery (under the care of Mr. G. A. Wright and Mr. J. E. Platt), 1122
MEXBOROUGH MONTAGU COTTAGE HOSPITAL.—A case of pyloric stenosis and gastric dilatation of very long duration (21 years); posterior gastro enterostomy; complete recovery (under the care of Mr. B. Crossfield Stevens), 935
MIDDLESEX HOSPITAL.—A case of foreign body impacted in the left bronchus; removal by operation (under the care of Dr. W. Pasteur and Mr. T. H. Kellock), 795
NABLUS HOSPITAL, PALESTINE.—A case of closure of the jaws due to cicatricial bands (under the care of Dr. J. Cropper), 653
NEWCASTLE-UPON-TYNE ROYAL INFIRMARY.—Cases in which death occurred after exploratory puncture of the chest (under the care of Dr. Thomas Oliver) 26—A case of Jacksonian epilepsy; trephining; temporary recovery; death from acute œdema of the brain (under the care of Dr. Thomas Oliver and Mr. W. G. Richardson), 1795
PRETORIA HOSPITAL.—A case of recovery after operation for perforation in enteric fever (under the care of Dr George Thornton and Dr. A. W. Sanders), 1725
ROCHDALE INFIRMARY.—A case of gastrostomy for stricture of the œsophagus (under the care of Mr. Wm. Pooley), 1722
ROYAL FREE HOSPITAL.—A case of repeated intestinal obstruction following an operation for removal of a cyst of the pelvis; recovery (under the care of Dr. T. C. Hayes and Mr. T. P. Legg), 1590
ST. BARTHOLOMEW'S HOSPITAL.—A case of vertigo due to labyrinthine caries; operation on the labyrinth; complete recovery (under the care of Mr. A. E. Cumberbatch and Mr. C. Ernest West), 1570
ST. GEORGE'S HOSPITAL.—Conservative operation in a case of acute suppurative salpingitis (under the care of Mr. Herbert W. Allingham), 25—Three cases of prostatectomy (under the care of Mr. H. W. Allingham), 1279
ST. MARY'S HOSPITAL.—A case of septicæmia with interesting complications (under the care of Dr. W. B. Cheadle), 653—A case of hernia cerebri following compound depressed fracture of the skull; removal on two separate occasions; recovery (under the care of Mr. A. Q. Silcock), 868
ST. THOMAS'S HOSPITAL.—Seven cases of intestinal obstruction (under the care of Mr. G. H. Makins, C.B.), 156
SALOP INFIRMARY, SHREWSBURY.—A fatal case of Raynaud's disease (under the care of Dr. Edward Cureton), 1349
SEAMEN'S HOSPITAL, LAS PALMAS, CANARY ISLANDS.—A case of enterectomy for gangrenous hernia (under the care of Dr. J. Cleasby Taylor and Dr. Rafael Gonzalez y Hernandez), 1055
SUNDERLAND INFIRMARY.—An unusual sequence of hernial troubles in an infant; operations; recovery (under the care of Dr. Stanley Raw), 225
SUSSEX COUNTY HOSPITAL.—A case of central gliomatosis of the spinal cord; complete paraplegia; normal delivery after induced labour (under the care of Mr. T. H. Ionides and Dr. E. Hobhouse), 1795
UNIVERSITY COLLEGE HOSPITAL.—A case of longitudinal fracture of the tibia (under the care of Mr. Rickman J. Godlee), 504—A case of tetanus treated with antitetanic serum; recovery (under the care of Dr. J. Rose Bradford), 934
WESTMINSTER HOSPITAL.—Five cases of ulcerative colitis (under the care of Dr. W. Murrell), 721
WORCESTER GENERAL INFIRMARY.—A case of chronic intussusception due to multiple polypi of the intestine (under the care of Dr. Mabyn Read), 797

Mistletoe (annotation), 111; an old Persian authority on, 756

[illegible] ham),
Monaghan and Cavan Asylum, 1540
Money, dirty, 381, 481; paper, as a means of [illegible]
[illegible]
Monstrosities, 1590
[illegible] l.
Moore, Dr. F. Craven, primary sarcoma of the liver, 1429
[illegible]
Morison, Dr. Alexander, cardiac failure, 291, obesity, 1206
Morison, Dr. B. J., medical practitioners and dispensing, 332, 625, 1003
Morocco, medicine and sanitation in, 50 (see also Tangier)
Morphia, prophylactic use of, in cases of severe cerebral injury, 1785
Morphia habit, an establishment for the cure of the, 1 26; in Russia, 1332
Morris, Mr. Henry, the cancer investigation committee of the Middlesex Hospital and [illegible] cancer, 684
[illegible] of the Skin [illegible]
Morten, Miss Honnor, consider the children, 99
Mortuaries, 40
[illegible] orts of [illegible] 0, 1824; [illegible] or Ounence (review), 1796
[illegible] in [illegible] al men, 642, 1661; safety in the house of, 1665
Motor symptoms of mania and melancholia [illegible]
[illegible] 231, 233
Moule, Mr H. J., the late, 900
Moullin, Dr. C. Mansell, entero colostomy for obstinate constipation, 54, operations upon the stomach, 92; cholecystitis, 220; backward dislocation of the head of the humerus, 496
Mount Sinai Hospital, New, of New York, 1022
Mouth and pharynx, tuberculous ulceration of, treated with radium rays, 872
[illegible]
Muco-membranous colitis and its treatment, 1166, 1223
[illegible] sis [illegible] of [illegible]
Mukowal disaster, the 333, 1083, 1170
[illegible]
Mumford, Dr. James Gregory, a narrative of Medicine in America (review), 306
Mummery, Mr. P. Lockhart, diagnosis of tumours in the upper rectum and sigmoid flexure, 1781
[illegible] t the new [illegible] l Kingdom [illegible]
Municipality, an Indian, neglect in sanitary matters of, 1017
Munro, Dr. John, "N" rays as a proof of death, 1082
Murphy, Dr. H. Howard, traumatic tetanus treated with antitetanic serum, 652
Murphy, Mr. J. Keogh, exhibition of cases by, 993
Murphy, Mr. Shirley, report for 1902, 171, 385, 456, 586; a letter to, from the Local Government Board, 449; and the homeless poor of the metropolis, 813; enteric fever and the water supply, 937
Murray, Capt., and his scheme of extra poorhouses, 761
Murray, Dr. J. A., cancer, 413
Murray, Dr. R. Milne, death of, 806
[illegible] distribution [illegible] litis, 721; a [illegible] rsion of the [illegible]
Muscle and nerve rays, 526, 610, 685, 831, 899
Muscular action, backward dislocation of the head of the humerus caused by, 496
Muscular atrophy, unusual case of (Dr. W. *Langdon Brown*), 1651
Muscular contractions, abnormal (Mr. E Noble Smith), 1269
Muscular structures of the heart, certain, evolution and action of (Dr. A. Keith), 555, 629, 703
Musical expression in a condition of hypnosis, 1386 1621, 1741
Mussel poisoning, 472
Myasthenia gravis (Dr. Risien Russell), 1205
Myelopathic albumosuria Dr. R. C. Bruce, Dr R. F. Lund, and Dr. P. P. Whitcombe), 1045
Myoma, infected, of the uterus with severe toxæmia treated by abdominal hysterectomy, 875
Myopia and school hygiene, 1073; high, treatment of, by extraction of the crystalline lens, 1824
Myopes, vision of, 1235
Myositis of the rectus abdominis after typhoid fever, 593
Myositis ossificans, progressive, 655
Myxœdema, mental state in (Dr. H. Wolseley-Lewis), 1117

N

"N" rays, 402, 526; the relation of, to vision, 594; experiments of Dr. H. Walsham and Mr. L. Miller, 610, 685, 831, in pathological [illegible]
[illegible]
the, surgical treatment of (Mr. Herbert Tilley), 1414
Nasal obstruction, latent or intermittent (Mr. Mayo Collier), 429, 874
Nasal septum and facial erysipelas, 176
Nase, Krankheiten der, Atlas der, &c. (Dr. P. H. Gerber), Parts V., VI., VII. (review), 371
Nash, Dr. J. T. C., water cress and typhoid fever, 54, red light in the treatment of small-pox, 646
Natal Volunteer Ambulance Corps, 1393
Nathan, Dr. P. W., chondrodystrophia fœtalis, 1369
National Association for the Employment of Discharged Soldiers, 1749
National Association for the Prevention of Consumption and other Forms of Tuberculosis, annual general meeting of, 823, 906; Dublin branch, 1313; Glasgow and district branch, 1465; Gloucester, Somerset, and Wilts branch, 1465
National Hospital for the Paralysed and Epileptic; lectures at, 112, 248; and organised scientific research, 313, matinée for the [illegible]
[illegible]
National Society for the Employment of Epileptics, 1828
[illegible] Cruelty [illegible]
[illegible] ction of (Dr. [illegible] (see Royal [illegible] 2 [illegible]
Necrosis, acute infective, bacteriology of, 1484
Necrosis, acute infective, in veterinary work, 1486
Neech, Dr. J. T., infectious disease in Bath, [illegible]
[illegible]
Nelson, Mr. E. M., microscopic image, 673
Nematoids, the mode of infection by, 286, 420, 643, 752, 833, 1379
Neolithic human remains, discovery of, at Cheddar, 473, 1616
[illegible] Inspector- [illegible] hrotomy [illegible] capsules [illegible]
1502, action of sodium chloride in, 1758
Nereis, some experiments on, and the "N" rays, 594
Nernst lamp, "N" rays and the, 970
Nerve and muscle rays, 526, 610, 685, 831, 899
Nerve, the fifth, the second division of, intracranial resection of, for neuralgia, 802
Nerve tonic and analgesic, the action of radium as, 652
Nervous diseases, cytodiagnosis in, 596
Nervous and Mental Diseases (Dr. Archibald Church and Dr. Frederick Peterson) (review), 1357
Nervous symptoms (Dr. H. N. Fletcher), 615
Nervous system, affections of the, choline and, 1313
Nervous System, Diseases of the (Sir W R. Gowers) (review), 1860
Nervous System, Slight Errors of Refraction and their Influence on the (Mr. C. E. Pronger) (review), 1663
Netter, M., Kernig's sign, 1369
Nettleship prize fund, 527
Neuralgia, epileptiform, intracranial resection of the second division of the fifth nerve for, 802, 1044
Neuralgia, paroxysmal, excision of the Gasserian ganglion for, 1124
Neurasthenia (Dr. O. W. Buckley), 1127, (Prof. Charles Dana), 1220; and speech defects, 1613
Neuritis, brachial, 578, 1042, occupation, in a coachman, 1541
[illegible]
Neurology of vision (Mr. J. Herbert Parsons), 1029 1102
Neuroses and psychoses in the offspring in relation to tuberculosis in the parents, 836; minor, 1737
Neurosis, a chronic, and death from acute pulmonary tuberculosis (Dr. T. K. Munro and Dr. A. N. McGregor), 1039
Neurotic heredity and cancer (Dr. James Shaw), 958
Neusser, Dr. Edmund, Diseases of the Liver, Pancreas, and Suprarenal Capsules (review), 1283
Neville Dr., transplantation of cyst tumour, 726

NEW INVENTIONS.—"Unique" gas griller, 100—"Fache" food warmer, 100—Electric foot or body warmer, 100—Tropical clinical thermometer 308—Entropium forceps, 309—Health tent, 309—Portable lamp for laryngoscopic purposes, 374—New inch measure, 374—Apparatus for maintaining artificial respiration, 515—New anaerobic apparatus, 515—Platinum thermometer and Callendar electric recorder for obtaining continuous

Methyl alcohol, toxic amblyopia caused by, 383
Metric System, 622, 693, 1213, 1734
Metritis and cellulitis in the puerperium treated with antisteptococcic serum (Dr. J. W. [illegible] ion) [illegible] rd, and its assistant [illegible] 2 378, 540, 670, 930, 693; and the supply of coal, gas, or electricity, 1144; and vivisection, 1392
Metropolitan Hospital Sunday Fund, composition of committees of, 193; and Mr. George Herring, 1372; annotation concerning, 1581; THE LANCET special supplement in support of the, 1625—1632; leading article on, 1665; letter from Sir J. T. Ritchie, Lord Mayor, 1684; lists of donations, 1745, 1817
Metropolitan Street Ambulance Association, 377, 592, 735, 821, 947, 1072, 1223, 1301, 1365, 1380, 1584, 1610
Mexico and yellow fever, 691
Mian Mir (Punjab), anti-malarial operations at (Dr. J. W. W. Stephens, 637
Microbes, Pathogenic (Dr. P. Jousset) (review), 1000
Microphthalmos, two cases of, 1356
Microscopic (see also Ultra microscopic)
Microscopic image and vertical illumination, 673; compounding draw-tube and oscillating screen, 1815
Microscopical Science, Quarterly Journal of (review), 33
Mid Cheshire hospital scheme, 1464
Middle-ear disease, intracranial complications of, 876
Middle-ear, sclerosis of, 84
Middle-ear suppuration, complicated, analysis of 691 cases of, 805
Middlesex, a sanatorium for consumptives for, 1794
Middlesex County Council and the appointment of a county medical officer, 384
Middlesex Hospital, annual court of governors, 693; festival dinner in aid of the funds of, 1072, 1248
Middlesex Yeomanry (Masonic) Lodge, 1375
Midland Counties Asylum at Knowle, 1614
Midland Counties Home for Incurables, 337
Midland Medical Union, 132
Midwifery (see also Geburtshulfe)
Midwifery, the practical teaching of, in America, 520
Midwifery training, Irish, and the Central Midwives Board, 401, 449, 457, 524
Midwives Act, 1902; and Irish training institutions, 181, 341, 401, 449, 457; responsibilities under the, 304; administration of, in Cardiff, 338, 893; in its bearing upon the work of general practitioners, 356; and the London County Council, 527; and the Royal College of Surgeons of England, 535; administration of, in Glamorgan, 690, 1756; in Lancashire, 1370
Midwives, Association for the Training and Supply of, 591, 1543
Midwives Board (see Central Midwives Board)
Midwives, district, proposed national training school for, 837
Midwives in Italy, 113
Midwives in the rural districts, 387
Midwives in workhouses, 452
Midwives' petition in Zurich, 1161
Mignon, M., meningitis following fracture of the base of the skull, 1314
Mikulicz, Prof. von, abdominal surgery, 1309
Miles, Dr. A., traumatic hæmatorrhachis, 670
Miles, Mr. U. W. N., 396
Military dentistry, 1377; surgery, 1799
Military hospital reforms, 891
Military medical intelligence, and the direction of military operations, 1150
Military stations, nurses in 1695
Military training, compulsory, 1581
Milk, for infants and invalids, 35; and tuberculosis, 107; its Production and Uses review), 307; a preparation of (yoghourt), 546; the preservation of, 546; concentrated, boric acid in, 618, 764; formalin in, 613; coloured, 1158; the standard for, 1463; albumenised humanised, 1512; for out-relieved children, 1329
Milk, Bacteriology of (Mr. H. Swithinbank and Dr. G. Newman) (review) 727
Milk, chemical tests of (Dr. Walter G. Smith), 873
Milk, consumption of, in the Woking urban district, 1078
Milk, disease due to outbreak of, at Finchley, 833; at Gloucester, 1616
Milk, humanised and sterilised, and infantile mortality, 872 1237; in the feeding of infants, 939; human and bovine, 1731
Milk, purity of, 693; adulteration of, 1695
Milk-pox, Kaffir (Dr. W. E. de Korte), 1273
Milk-supply of Manchester, 41; of Finsbury, 828; and vivisection, 1145; of Liverpool, 1237
Milk-supplies, cleanliness of, 127; medical [illegible] 693 [illegible] borderlands of infec- [illegible]
Miller Hospital, bequest to, 201
Miller, Dr. D. J. M. tapeworm in a child, 1751
Miller, Dr. H. P., eye diseases, 581
Miller, Mr. Leslie, muscle and nerve rays, 526, 610, 685, 831, 1150
Milligan, Dr. G. C, obituary, 475
Milligan, Dr. W., suppuration of the labyrinth, 416, 805
Milroy, Dr. J. A., and Prof. T. H. Milroy, Practical Physiological Chemistry (review), 513
Milroy lectures, 1701, 1772
Milward, Dr. James, retirement of, 261
Minchin, Prof. E. A., sporozoa in relation to disease in man and animals, 736, 889, 950, 1039, 1296, 1371
Mind, the human, the study of (oration by Dr. Haslam in 1826), 812
Mineral springs and baths in Algeria, 1524
Mineral Springs and Climate, Therapeutics of (Dr. I. Burney Yeo) review), 1358
Mineral water of Kara-hissar i Sahib, analysis of, 953
Mineral waters, natural some points concerning, 323; action of, 1371
Miners' anæmia, cause and prophylaxis of, 1313
Miners' phthisis commission for the Transvaal, 810, 1362, 1444, 1471, 1697, 1736, 1763
Mining shafts, disused, 58
Minnesota, University of, typhoid fever and diphtheria at, 763

MIRROR OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Aberystwyth Infirmary and Cardiganshire General Infirmary.—A case of unusual fracture of the clavicle (under the care of Mr. R. T. Edwards), 1201
Berkshire Royal Hospital, Reading.—Two cases of thrombosis (under the care of Dr. Francis H. Hawkins), 793
Birmingham Queen's Hospital.—A case of an uncommon form of spina bifida (under the care of Mr. W. Billington), 1053
Bristol Royal Infirmary.—A case of triple telescopic intussusception originating in Meckel's diverticulum (under the care of Mr. T. Carwardine), 505
Bulawayo Memorial Hospital.—(1) A case of interscapulo thoracic amputation; and (2) a case of Cæsarean section (under the care of Mr. W. G Clark), 366
Central London Ophthalmic Hospital.—Opitic neuritis, ocular paralysis, and absence of the knee jerks in a case of chlorosis (under the care of Mr. Ernest Clarke and Dr. C. O. Hawthorne), 1198
Devon and Exeter Royal Hospital.—A case of intracranial hæmatoma (under the care of Mr. J. Delpratt Harris), 1199—Two cases of actinomycosis (under the care of Mr. C. E. Bell and Mr. J. D. Harris), 1656
Devonport Royal Albert Hospital.—Perforated duodenal ulcer; operation; recovery (under the care of Dr Alonzo G. Rider), 1425
Durham County Hospital.—A case of double multilocular cyst of the ovaries (under the care of Dr. S. W. Plummer), 1351
East London Hospital for Children, Shadwell, E.—A case of diaphragmatic hernia (under the care of Dr. Eustace Smith), 1424
French Hospital.—Six consecutive cases of disease of the Fallopian tubes (under the care of Dr. S. Sunderland and Mr. Edmund Owen), 991
Government Civil Hospital, Hong Kong.—A case of double amputation; recovery (under the care of Mr. E. A. R. Laing), 95—A case of ruptured spleen presenting features of unusual medico-legal interest; splenectomy; death (under the care of Mr. E. A. R. Laing), 1122
Great Northern Central Hospital.—A case of sarcoma of the pleura and lung with consecutive pericarditis and growth in brain and pancreas, presenting unusual clinical features (under the care of Dr. H. W. Syers), 1651
Hillingdon Cottage Hospital.—A case of tetanus treated by the injection of antitoxin (under the care of Dr. A. Charpentier), 1722
Leeds General Infirmary.—A case in which a gall stone was removed from the gall-bladder; subsequent development of malignant disease of the gall-bladder; death from suppurative cholangitis (under the care of Mr. R. Lawford Knaggs), 1054
Lincoln County Hospital.—A case of total paraplegia due to caries of the middle dorsal vertebræ; costo-transversectomy; complete recovery (under the care of Dr. W. H. B. Brook), 505
Liverpool Infirmary for Children.—Four [illegible] inguinal hernia in [illegible] five weeks, four [illegible] (under the care of Mr. R. C Dun) 1591
Liverpool Mill-road Infirmary.—Two cases of tubal gestation; rupture; abdominal section; recovery (under the care of Dr. Nathan Raw), 297
Liverpool Royal Southern Hospital.—A case of spontaneous perforation of the intrapericardial portion of the inferior vena cava (under the care of Mr. I. McW. Bourke), 723
London Hospital.—23 consecutive cases of operation upon the stomach (under the care of Mr. C. W. Mansell Moullin), 92
Manchester, Royal Infirmary.—A case of cicatricial pyloric obstruction; pyloroplasty; hæmatemesis from a second ulcer; operation; recovery (under the care of Mr. G. A. Wright and Mr. J. E Platt), 1122
Mexborough Montague Cottage Hospital.—A case of pyloric stenosis and gastric dilatation of very long duration (21 years); posteri[illegible] complete recovery [illegible] B. Crossfield Stevens), [illegible]
Middlesex Hospital.—A case of foreign body impacted in the left bronchus; removal by operation (under the care of Dr. W. Pasteur and Mr. T. H. Kellock), 795
Nablus Hospital, Palestine.—A case of closure of the jaws due to cicatricial bands (under the care of Dr. J Cropper), 653
Newcastle-upon-Tyne Royal Infirmary.—Cases in which death occurred after exploratory puncture of the chest (under the care of Dr. Thomas Oliver), 26—A case of Jacksonian epilepsy; trephining; temporary recovery; death from acute œdema of the brain (under the care of Dr. Thomas Oliver and Mr. W. G. Richardson), 1795
Pretoria Hospital.—A case of recovery after operation for perforation in enteric fever (under the care of Dr George Thornton and Dr. A. W. Sanders), 1723
Rochdale Infirmary.—A case of gastrostomy for stricture of the œsophagus (under the care of Mr. Wm. Pooley), 1722
Royal Free Hospital.—A case of repeated intestinal obstruction following an operation for removal of a cyst of the pelvis; recovery (under the care of Dr. T. C. Hayes and Mr. T. P. Legg), 1500
St. Bartholomew's Hospital.—A case of vertigo due to labyrinthine caries; operation on the labyrinth; complete recovery (under the care of Mr. A. E. Cumberbatch and Mr. C. Ernest West), 1570
St. George's Hospital.—Conservative operation in a case of acute suppurative salpingitis (under the care of Mr. Herbert W. Allingham), 25—Three cases of prostatectomy (under the care of Mr. H. W. Allingham), 1279
St. Mary's Hospital.—A case of septicæmia with interesting complications (under the care of Dr. W. B Cheadle), 653—A case of hernia cerebri following compound depressed fracture of the skull; removal on two separate occasions; recovery (under the care of Mr. A Q Silcock), 868
St Thomas's Hospital.—Seven cases of intestinal obstruction (under the care of Mr. G. H. Makins, C.B), 156
Salop Infirmary, Shrewsbury.—A fatal case of Raynaud's disease (under the care of Dr. Edward Cureton), 1349
Seamen's Hospital, Las Palmas, Canary Islands.—A case of enterectomy for gangrenous hernia (under the care of Dr. J. Cleasby Taylor and Dr. Rafael Gonzalez y Hernandez), 1055
Sunderland Infirmary.—An unusual sequence of hernial troubles in an infant; operations; recovery (under the care of Dr. Stanley Raw), 225
Sussex County Hospital.—A case of central gliomatosis of the spinal cord; complete paraplegia; normal delivery after induced labour (under the care of Mr. T. H. Ionides and Dr. E. Hobhouse), 1795
University College Hospital.—A case of longitudinal fracture of the tibia (under the care of Mr. Rickman J Godlee), 504—A case of tetanus treated with antitetanic serum; recovery (under the care of Dr. J. Rose Bradford), 934
Westminster Hospital.—Five cases of ulcerative colitis (under the care of Dr. W. Murrell), 721
Worcester General Infirmary.—A case of chronic intussusception due to multiple polypi of the intestine (under the care of Dr. Mabyn Read), 797

Mistletoe (annotation), 111; an old Persian authority on, 756

in Central
and coffee
testimonial,
ies and insurance, 1621—Madame Magdeleine 1621—Suicides in Manchester, 1621—Striking a patient in a lunatic asylum, 1621—A question of treatment, 1622—99 per cent. adulteration, 1622—Norwegian sanatoriums, 1622—Patent absorber briar 1622—Wanted, a

fund, 1832—Latuma abnormal, 1832—Predigested foods, 1832—Morphine habit in Russia, 1832

'Nothing illegal entertained,' 1171
Nothnagel's Encyclopædia of Practical Medicine Diseases of the Liver, Pancreas, and Suprarenal Capsules (review), 1283
Notifiable disease chicken pox as a 885; phthisis as a, 1239, 1525, measles as a, 1618
Notter, Col. J. Lane (R A M.C.), enteric fever in South Africa, 937
Nottingham Small pox Hospital, 676
Nourishment of school children, 1246
Nurse Charlotte (Mrs. L. T Meade) (review), 1001
Nurses, a municipal training school for, in Berlin, 617
Nurses, American, for the Japanese army, 763
Nurses, army, position of, 1317, female, and male patients, 1698
Nurses and Private Nursing Homes Bill, 767
Nurses certificates, 767

Nursing in Ireland,
1471,
also

ent)

Nuttall, Dr. G H F, and the Fellowship of

O

Oat milk cocoa, 373
Oath, the Scotch, 1474
Oberndörfer, Dr Ernst, tuberculous deposit in the spinal cord in the course of pulmonary tuberculosis 1071
Obesity, some aspects of (Dr Leonard L B. Williams), 876, (Dr. W. Bain) 1206

OBITUARY —John Knowsley Thornton, M B,

William Donald, M D Aberd, 404—George

Thin, M.D St. And, L R.C S Edin., 474—

M R C S Eng, 1023—J Peeke Richards, M R C S Eng, L S A, 1023—Joseph May, F.R C S Eng, L S A. J P, 1089—Walter Winter Walter, M R C S Eng, L S A, 1089—Daniel Mouncey Atkinson, L R C P, L R C S Edin, L F P S Glasg, 1089—Sir Henry Thompson, Bart, M B Lond, F R C S. Eng, 1163—Sir Philip Crampton Smyly, M D Dub, F R C S Irel, 1167—Francis J Lander, M R C S. Eng., L R C P Lond, 1243—James Francis Taplin, M.D, C M Glasg, 1243—George Coché Obeshaye, M.R C P, F R C S Irel Surg Col., I M S, 1243—Austin Meldon, F R C S., M R C P Irel, 1315—William Fothergill Tuckett, M R C S. Eng, L R C.P Ed, L S A, J P 1315—Richard Bisley, M D, M R C.P Lond, 1389—George Richard Saunders, M B, B C Cantab, L R C.P. Lond. M R.C S Eng, 1390—M Duclaux, 1467—Etienne J Marey, Professor in the Collège de France, Paris, and Member of the Institute, 1530—Louis Leopold Jenner, M A, M B B Ch Oxon, M R C P Lond, 1826—Edward James Alfred Trimmer, M A Cantab, 1826

Obituary, Australian, 200, 765
Obsessions and morbid impulses 1441
Obstetric satchel, the (Dr. J W. Ballantyne), 1728
Obstetrics, a Text book of (Prof J C Webster) (review), 660, a Manual of (Dr A F A King) (review), 1511, the Practice of (Dr J Clifton Edgar) (review), 1728, Western in the East, 1766
Obstruction, intestinal, 156, 510, 725, 791, 800, 876, 936, 1500, 1787
O Callaghan, Dr. K. McD., a charge against, 1299
Occlusion of the œsophagus, congenital, 361

Odoriferous glands of man, 146
O Duffy v. Jafte, Surgeon Dentists, Limited, 814
619,
of by
1124,
the,

Œsophagus, occlusion of, congenital 361, 381, stricture of the, gastrostomy for, 1722
Officers, army, medical attendance on, 1818
Ogden, Dr J Bergen, Clinical Examination of the Urine and Urinary Diagnosis (review), 1132
Ogg, Mr. Theodore A W, lead poisoning in white lead factories 23
Okunev, Mr V N, disease in war, 1149
Old age (see also Centenarians Longevity)
Old love and the new, the, 1025
Old riddle and the newest answer (Mr John Gerard), 1286
Oldbury alkali works 65
Oliver, Dr George, present to the Royal College of Physicians of London 389, Oliver

Oliver, Dr Thomas, death or collapse after exploratory puncture of the chest, 26, miners phthisis in the Transvaal, 1362,
389, lectures,
litus, 395, the
408

Ontario, Board of Health, 617, 902; vital statistics of, 617; *licensing in,* 1518

elastic traction, 110, ankylosis and osteo arthritis, 1204
Operating theatre, a new, at the Royal Infirmary, Liverpool, 834
Operation table, an improved portable (Mr. J L. Stretton), 731
Operation wounds, the treatment of, 815
Operations, infection during, a source of, 235
Operations, intrathoracic, 1208
Operations surgical, the use of hot bottles after, 1150, 1250

Ophthalmia, Cassel fund to fight, 1241
Ophthalmia in a Derbyshire village (Staveley), 1464, 1755
Ophthalmic cases, some exceptional (Dr W. C. Rockliffe, 1354
Ophthalmic Hospital, Royal London, reports, 166
Ophthalmic Hospital, the British, at Jerusalem, 109
Ophthalmic hospitals travelling, 1010, 1241
"Ophthalmic optician,' 1645

Ophthalmology, Annals of (review), 1576
Ophthalmology, Congress of, at Lucerne, 688
Opium, the administration of, in pneumonia, 517, 707

Optician and Photographic Trades Review and "Testing the Eyesight of a Nation,' 1063
Opticians sight testing by, 240
Order of the Hospital of St John of Jerusalem, promotions 741
Organic Compounds, Pure, Identification of

Osborne, Dr Alfred, travelling ophthalmic hospitals, 1010
Osborne House Convalescent Home for officers of the navy and army, 320, 608
Oser, Dr Leopold, Diseases of the Liver, Pancreas, and Suprarenal Capsules (review), 1283
Osiris prize, 287
Osler, Prof. W, alkaptonuria, 10
Osteitis deformans, two cases of, in one family, 221
Osteo arthritis of the spine (Dr. L. P. Phillips), 6 6
Osteo arthropathy, pulmonary, hypertrophic (Dr. H E Symes Thompson), 157; (Dr. W H Wynn), 1731
Osteopathy, 157
1758
97

herapeutic

of 142
Ovarian and uterine tumours, large, 891
Ovarian "fibroid' tumour removed by posterior colpotomy, 365
Ovarian hernia with twisted pedicle in an infant, 670
the (Dr

Overcrowding in Manchester (cottages v. tenements), 768
Overcrowding of union schools 624
Overcrowding on the underground east end trains, 480
Overend, Dr Walker, ichthyol in tuberculous glands, 296
Overhead wire dangers of the, 246
Owen, Mr. Ischaemic paralysis, 434
Owen, Mr. David Charles Lloyd, 1446

Owen, Mr. Edmund, appendix abscess in the recto-vesical pouch, 509; disease of the Fallopian tubes, 994

Owen, Sir Isambard, electro-therapeusis, 69; future of medical education in London, 1372, 1399, 1435; University of Wales and a medical degree, 1442

Owen, Sir Richard, personal recollections of, 696

Oxford and Cambridge Year-book, 1904 (review), 1511

Oxford University, the Regius Professorship of medicine at, 44, 116, 319, 721; graduation, 404, 903, 1181, 1391, 1617, 1827; Philip Walker studen[illegible]; and the resear[illegible] College, 475; [illegible] forensic medic[illegible] 551, 1169; exemption from Greek, 621; scholarships in natural science, 6[illegible]1; Board of Faculty of Medicine, 837; (D.P.H. exam.), 965; examinations for the degree of M.B. and B.Ch., 1024, 1468; Professor of human anatomy, deputy of, 1091; examinations for M.B. and M.Ch., 1316; appointments, 1694

Oxygen, therapeutic use of, 1161

Oxygen and chloroform anæsthesia, 1085

Oxygen treatment for chronic ulcers, 408

Oyster, bacteriology of the, 1451

Oysters and typhoid fever, 1158

Ozonising cigarette tobacco, 374

P

Paget, Mr. Stephen, uses of paraffin in plastic surgery, 805; Experiments on Animals (review), 1664; the Case against Antivivisection (review), 1664

Pain and its importance in diagnosis, 234; the cry of, 969, 1142, 1473

Pain, referred, the site of, in visceral disease, from an embryological standpoint (Dr. W. M. Willoughby), 1048

Pain, reno-renal reflex (Dr. David Newman), 1111

Paine, Dr. A., iron hæmatoxylin staining, 435

"Painful pronation" of childhood, 820

Paint, "Ferrubron," 730

Paisseau, M. G., meningitis in typhoid fever, 1366

Palmer, Mr. W. T., In Lakeland Dells and Fells, 99

Palsy, facial, as a family disease, 224

Panama, isthmus of, condition of the, 764, 1088, 1314, 1388, 1824

Pancreas, adaptation of the, 1433

Pancreas, diseases of the, chemistry of the urine in (Dr. P. J. Cammidge), 782

Pancreas, pathology and surgery of certain diseases of the (Mr. A. W. Mayo Robson), 773, 845, 911

Pancreas, relation of the, to diabetes (Dr. James W. Allan), 1343; (Dr. A. Lorand), 1820; and the thyroid, 1820

Pancreas, sarcoma of the, associated with pseudo-lipæmia, 1280

Pancreatic reaction, so-called, in the urine, 782, 1379, 1459, 1684, 1685, 1750

Pancreatic infantilism (Dr. Byrom Bramwell), 725

Pancreatitis, chronic, 454, 1506; subacute, 658; hæmorrhagic, acute, 1559

Pannus, trachomatous, and its associated changes (Major H. Herbert, I.M.S.), 1354

Papakosta, Dr. George, urticaria and malarial fever, 92

Paper money as a means of carrying infectious germs, 1088

Papyrus, the Demotic Magical, 1582

Paracentesis and the use of the aspirator in [illegible] West), 751

P[illegible] of, for the treat[illegible] æces (Mr. A. H. [illegible] plastic surgery (Mr. Stephen Paget), [illegible]

Paralysis, progressive, in the insane (Dr. T. B. Hyslop), 578

Paralysis agitans (Dr. C. M. Campbell), 510; Dr. T. Stuart Hart on, 1069

Paralysis, bulbar, chronic, post-diphtheritic (Dr. Wilfred Harris), 1057

Paralysis, facial, a case of, associated with herpes zoster, 18

Paralysis, family, an unusual form of, 17

Paralysis, general, the pathology of the blood in, 40; infantile, 1692

Paralysis, Klumpke's, 1659

Paralysis, lead, an unusual form of, 1[illegible]43

Paralysis, musculo-spiral, transplantation of tendon for (Mr. H. M. W. Gray), 1419

Paralytic deformities (Mr. J. Jackson Clarke), 1726

Paraplegia, total, a case of, due to caries of the middle dorsal vertebræ, 505; costo-transversectomy for an obstinate case of, 1205

Parasite, a new [illegible], 1021

Parasite, an [illegible] unsuspected source of [illegible]

Pardoe, Mr. J. G., prostatectomy, 870; tuberculin in disease of the kidney, 935

PARIS, CORRESPONDENCE FROM.—Renal opotherapy in albuminuria, 59—Total or partial hysterectomy for uterine fibroids, 60—A healthy parish, 60—A new hospital, 60—Lumbar puncture in diseases of the ear, 128; in the treatment of urinary incontinence, 1466—Lazaret at Frioul, 128—Out-patients at the hospitals and dispensaries, 198—A victim of hypnotism, 198—Sleeping sickness, 199—The Inspector-General of the Sanitary Service, 263—Feeding of infants, 263—Abscess of the maxillary sinus, 264—Institute of Colonial Medicine, 264—"Chloridated" diet and hyperchlorhydria, 264, 762, 1758—Protective measures for the health of the nation, 341—Bleeding in cases of severe typhoid fever, 341—Horseflesh in the hospitals, 341—The action of Roentgen rays on animal tissues, 341—Medical men and the Workmen's Compensation Acts, 402—The "n" rays, 402—Picture post-cards and the hospitals, 402—Elastic springs as labour-saving agents, 473—New rules for the competition for the position of hospital physician, 474—Tubercular arthritis, 474—The Information Bureau of the University of Paris, 458—Opposition to a sanatorium for tuberculous patients, 546—Yoghourt, 546—Diagnosis of actinomycosis, 616—Causes of congenital dislocation of the hip, 616—Inspection of the Paris hospitals, 616—Presentation to Prof. Bouchard, 616—Disturbances at the Faculty of Medicine, 690—French ambulances for the Russo Japanese war, 691—The treatment of cancer, 762, 1085, 1241, 1758—The "femme tuberculeuse," 762—Acid medication of the duodenum, 762—The Budget of the Assistance Publique for 1904, 762—Asylums for those temporarily indigent, [illegible]—Hygiene and the [illegible]eping woman of [illegible] isolation for cases of contagious disease, 900—Water-supply of Paris, 901—Prophylaxis of malaria, 901—Dangers of radio-therapeutic applications, 901—Motorists' fractures, 962—Honours to Prof. Cornil, 962—National Periodic Congress of Gynæcology, Obstetrics, and Pediatrics, 963, 1240—A new professor, 963—False reports as to a typhoid fever epidemic in Paris, 963—Infant life protection in a small French commune, 1021—A new parasite, 1021—Statistics of the Pasteur Hospital, 1021—A case of poisoning, 1022—Chloroform and oxygen anæsthesia, 1085, 1759—A new local anæsthetic, 1085—Isolation of the tuberculous at Paris, 1085, 1161—Chemical constitution of living beings, 1085—Number of the tuberculous in the Paris hospitals, 1161—Therapeutic uses of the peroxides, 1161—The graphic method, 1240—Pathological agent of human trypanosomiasis, 1240—Oöphorectomy in inoperable cancer of the breast, 1241—Cause and prophylaxis of miners' anæmia, 1313—Local cocaine anæsthesia in abdominal operations, 1313—Choline and affections of the nervous system, 1313—Lumbricosis in the colonies, 1314—Surgical treatment of meningitis following fracture of the base of the skull, 1314—Alternate administration of arsenic and of sulphate of quinine in malaria, 1386—Antivenomous sera, 1386—Death of M. Duclaux, 1386—Voices of Deaf-Mutes 1386—French Congress of Climatotherapy and Hygiene in Towns, 44, 1386—Musical expression in a condition of hypnosis, 1386—Surgical treatment of a wound of the heart, 1465—Nascent state and the properties of drugs, 1540—Occupation neuritis in a coachman, 1541—Medical cases in the law courts, 1541—Poisoning by naphthol camphor, 1617—Psychical phenomena due to teething, 1617—Dietetic treatment in disease of the liver, 1617—"Pen stammering," 1617—Carbon dioxide baths, 1691—Radiography of foreign bodies, 1691—Facilities for factory workers suckling their infants, 1691—Treatment of epitheliomata by the x rays, 1691—Infantile paralysis, 1692—Obituary, 1692—Cancer mortality, 1758—Sodium chloride in nephritis, 1758—Sterilisation of corks, 1758—Fees for treatment of relatives 1758—Osteoplastic amputation of the leg, 1758—Gastro-enterostomy for hæmorrhagic ulcer of the stomach, 1823—Impaction of a tooth-plate in the œsophagus, 1824—Treatment of high myopia by extraction of the crystalline lens, 1824—Infection of a wet nurse by a syphilitic infant, 1824—Separate collection of the urine from each kidney, 1824

Paris Academy of Sciences, medical prizes of the, 319

Paris and London, number of medical men in, in the year 1822, 1801

Parkes, Dr. Louis C., London dust, 519

Parkes memorial prize, 1222

Parkinson, Dr. J. P., morbus cordis, 655

PARLIAMENTARY INTELLIGENCE.—Opening of the Session, 406—The physical condition of children, 478, 967—Cancer returns, 478—Private Members' Bills, 478—Arsenical poisoning, 478, 1469—Proposed amendment of Medical Act, 1886, 549—Registration of nurses, 549, 622, 693—Care of lunatics, 549, 1469, 1472—Whisky question, 549, 624, 693, 768, 904, 1170, 1393—Cancer in India, 549—Health of post-office staff, 549, 1829—Nursing in Ireland, 549—Sanitary inspectors, 549—Inspection of pauper children, 549, [illegible] Weights and [illegible]lls, 622, 693, 1[illegible]—Cigarette smoking, 623—Sick and wounded in war, 623—Irish dispensary medical officers, 623, 840—North Dublin Union Infirmary, 623—Pollution of the Thames, 623—Dentists for the home troops, 623, 1247—Finances of the County Dublin Infirmary, 623—Vaccination and revaccination, 624, 693, 767, 839, 904, 967, 1247, 1317, 1544, 1764, 1828—Mishap at Portsmouth Lunatic Asylum, 624, 768—Overcrowding of union schools, 624—Experiments on animals, 624, 967, 1170, 1247, 1392, 1393, 1471, 1544—Sale of poisons, 693, 904—Metropolitan Asylums Board and treatment of ringworm, 693, 1764; and vivisection, 1392—Purity of milk 693—Medical officers and milk-supplies, 693—Sanitary administration in the army, 693—Nurses and nursing, 549, 767, 1247, 1317, 1392, 1471, 1695, 1764—Pharmacy Bill, 767, 839, 904—The medical Members of Parliament, 767—Accidental suffocation of infants, 767—A Galway hospital case, 767—A medical question and a matter of degree, 767—Glycerinated calf lymph, 767, 1695, 1763—Inoculation against enteric fever, 767, 1695—Small-pox in Scotland, 768—Royal Commission on Tuberculosis, 768, 839—In praise of the Army Medical Department, 768—National and research scholarships, 8 9—Indian Medical Service, 839—Committee on physical degeneration, 839—Plague in India, 839, 904, 1170—Bovine tuberculosis, 839, 1169—Adulteration of brandy, 839, 1170—Outbreak of disease at Finchley, 839—Frozen meat and cancer, 839 A professorship of biology, 840—Miners' Phthisis Commission, 640, 1471, 1763—The care of imbeciles and a Royal commission, 840, 967, 1170, 1469—Allowances to medical witnesses, 840, 1247—General Board of Lunacy, 904, 1469—Anthrax, 904—Plague in South Africa, 904, 966, 967, 1170, 1247, 1392—Death certification, 904—Uncertified deaths in Scotland, 904, 1544—Atmosphere of the Underground Railway, 966—Chinese labour and plague in South Africa, 966—Dentistry in East Africa, 967—Politics in an asylum, 967—Shops Bills, 967, 1316 1695—Local Government Board, medical department, 1091—Disposal of sewage, 1091—Superannuation of Irish Poor-law medical officer, 1170—An error of judgment (Dr. Tierney, J.P.), 1170—Medical officers in the Highlands, 1170—Plague at Hong-Kong, 1170—Inoculation for plague, 1170—Deaf and dumb children, 1170—Nourishment of school children, 1246—Alleged evasion of the Factory Acts, 1246—Soldiers and sailors in lunatic asylums, 1247—Rats and the plague, 1247—Treatment of epileptics, 1247—Irish asylum incident, 1247—Medical appointment questioned, 1247, 1393, 1544—Public vaccinators, 1247—Education of epileptic children, 1247—Public Health Acts Amendment Bill, 1247, 1823, 1829—Small-pox in London, 1247, 1318—Schools and epidemics, 1247—Sir Michael Foster and ventilation, 1317—The committee [illegible], 1317—Flogging a[illegible] inebriates, 1317—[illegible] officers' 1317—Deaths from burns, 1317—Unwholesome teas, 1317—Fumigation of vessels, 1318—Foreign spirits as Irish whisky, 1393—Medical staff of Meath Hospital, 1393—Ballinasloe Asylum case, 1393, 1544, 1763—Royal Army Medical College, 1393—Natal Volunteer Ambulance Corps, 1393—Another plague question, 1393—Coastguard dwellings and public health, 1393—Corporal punishment, 1469—Lunacy Commission, 1469—Ether for manufacturing purposes, 1471—Disease on the Rand, 1471—Nursing of sick poor, 1471, 1764—Amendment of

Lunacy Acts, 1472 1544—Manufacture of serum, 1543. 1619—Medical examination of school children, 1543 — Alleged violation of the Lunacy Act, 1544 — Case of Dr. Kirwan (Ballinasloe Asylum), 1544 — Medical inspect[illegible] consumpti[illegible] 1695—Po[illegible] Hospital [illegible] Cromarty, [illegible] 1763 — Phosphorus poisoning, 1763—Regis-[illegible] al [illegible] al [illegible] at [illegible] [illegible] or [illegible] es [illegible] of [illegible] u,
[illegible]
Parry, Mr. E. J., adulteration of cod-liver oil, 378, 687
[illegible]
Pa[illegible]
[illegible] London, 201, 342, 470, [illegible] [illegible] ination, 330; [illegible] examination, [illegible], 903, 1301— [illegible] and Royal [illegible] conjoint exa-[illegible] Institute of Chemistry of Great Britain and Ireland, 405; Royal College of Surgeons in Ireland, 621, 965, 1024, 1543; Royal Colleges of Physicians and Surgeons, Examining Board in England by the, 620; Victoria University, Manchester, 905; Aberdeen University, 1023, 1090; Glasgow University, 1090, Royal Colleges of Physicians and Surgeons of Edinburgh and Faculty of Physicians and Surgeons of Glasgow, 1089, Edinburgh University, 1168
"Passing off," 1289
Pasteur, Dr. W., foreign body impacted in the left bronchus, 795, 802, value of hot-water injections as a substitute for nutrient enemata in the treatment of gastric ulcer, 1418
[illegible] nual [illegible] 662: [illegible] of a [illegible] (review), 1000
Pathogenic Microbes (Dr. P. Jousset), (review), 1000
Pathological curiosity, 124
Pathological schools, some remarks on (Mr. Edward S. Prior), 1225
Pathology and surgery of certain diseases of the pancreas (Mr A. W. Mayo Robson), 773, 845
Pathology, Clinical, of the Blood (Dr. James Ewing) (review), 582
Pathology, a Manual of (Dr. Joseph Coats) (review), 1284
Pathology, a Text-book of (Dr. Alfred Stengel) (review), 1432
Pathology, Philip Walker Studentship in, 456
Patient, a much afflicted, 1379
Paton, Dr D. Noel action of adrenalin on the metabolism of the bird 654
Paton, Mr. E. Percy, perigastric adhesions, 357
Paton, Mr Leslie, use of mucous membrane from frog's mouth for grafting in a case of symblepharon, 1121
Paul, Dr M. Eden, gonorrhœal infection in the female, 395
Paul, Dr. W. E, thumb injury, 455
Paul Mr F. T., technique of aseptic surgery, 1124, cancer of the bladder, 1208
Pauper (see also Indigent)
Pauper children, inspection of, 549, vaccination of, 957; care of, 1695
Pauper lunatics, the law relating to (Mr. Sydney Davey) (review), 1209
Paupers, classification of, the need for, 43; cremation for, 760
[illegible] et Photo-[illegible]
Pearl oysters, 1400
Pearse, Mr. G. E. Legge, obituary, 342
Pearson, Dr. S. Vere, diagnosis of pulmonary [illegible] children, [illegible] e ponto-[illegible]
Pediatrics (Dr. T. M. Rotch) (review), 1575
Pedicle, torsion of the, in hydrosalpinx, and other morbid conditions of the Fallopian tube, 1058
Pedicle, twisted, of an ovarian tumour thrice reduced without operation, 1521
Pediculi capitis, treatment of, 66, unsuspected source of, 1396
[illegible] inson [illegible] dia-gnosis, 303
Pelvis, contracted, diagnosis and treatment of (Dr. J. M Munro Kerr), 727
"Pen stammering," 1317
[illegible] W. Mayo [illegible]
Pepys, Mr. Samuel, who performed lithotomy on? (Mr. D'Arcy Power), 1011
Perambulators modern, 1520
Perdicaris, Mr. Ion, and sanitary reform at Tangier, 1525
Pereira, Dr. J. A W., ascites cured by iodide of potassium, 24
Perforation in typhoid fever, early diagnosis of, 1071
Perigastric adhesions, surgical treatment of, 357
Perimetritis, encysted (Mr Percival E. Barber) 676
[illegible]
Perkins, Dr. G. O. Steele, appendicitis, 1203
Periwinkles exported from Ireland to England, 615
[illegible] of the [illegible]
Perry, Dr. S. H., care of the feeble-minded 1019
Persia and Mesopotamia, cholera in, 1153, 1537, 1812
Persian medicine, 1584
Peruol, 373
Pessaries, dangers of 1126, 1507
Peste, La (Dr. J. Th. Dupuy) (review), 998
[illegible]
Philanthropy in war, 1376
Philip Walker studentship in pathology, Oxford University, 456
[illegible]
Phillips, Dr. Sidney P., fibroid disease and calculi of the pancreas with jaundice and diabetes, 508; osteo arthritis of the spine, 656
Phonograph and auxetophone, 1456
Phosphates and urea of urine, 124
[illegible] ation [illegible]
Phthisis, miners', in the Transvaal, 1362, 1444, 1471, 1697, 1737, 1763
Phthisis, 301 cases of, results of treatment of, by open-air methods (Dr. David Lawson), 1420
Phthisis and disorders of the spleen, 1480
[illegible]
Physical deterioration committee and the R C S Eng, 535, 825
[illegible] Edward VII., 1144
Physical education, Swedish system of, 100; [illegible] from [illegible]
Physicians, two Greek, at the court of the Cæsars, 1222
Physics applied to medicine (Sir Oliver Lodge), 898
[illegible]
Physiological Chemistry, Practical (Dr. J. W. Milroy and Professor T. H. Milroy) (review), 513
Physiological Feeding of Infants (Dr. G. Eric [illegible]
[illegible] 1061
Physiology Lectures on, vol. I., Signs of Life from their Electrical Aspect (Dr. A D. Waller) (review), 1000
[illegible] lis-[illegible] ia, 1806
Picric acid, in the treatment of burns, poisoning by, 247
Picture post cards and the hospitals, 402
Pied piper of Hamelin a suggested origin of the legend (Mr J. S Mackintosh), 970
Pierce, Dr H. W. C., report on the Woking urban district, 1078
Piercy, Mrs., inquest upon (West London Hospital case), 1366
Pigeons, carrier, the employment of, by [illegible]
[illegible] stitute for [illegible] Vibratory [illegible] of (Mr. [illegible] the feeble-minded, [illegible]
Pipe, tobacco, a new, 1622; the disinfecting, 1831
Piper, Mrs, and the Society for Psychical Research (review), 1431
Piroplasma Donovani (a new parasite), 1021
Pirrie, Mrs., the freedom of the city of Belfast for, 1084
Pistor, Dr. Moritz, enteric fever in Prussia, 1370 1427
Pitt, Dr. G. Newton, sanatorium treatment, 1202
Pituitary body, tumour of the, symptoms of, 453
[illegible] atment of [illegible] F. Gordon [illegible]
Plague and Chinese labour in South Africa, 956, 1293
Plague and other diseases, adrenalin chloride in, 1062

Plague and rats, and the results of the use of Dr. Danysz's virus, 1247
Plague and the Government of West Australia, 764
Plague, distribution of, in South Africa, 45, 112, 177, 248, 319, 384, 456, 527, 597, 673, 741, 823, 892, 951, 966, 967, 1010, 1069, 1141, 1223, 1247, 1366, 1392, 1443, 1520, 1523, 1585, 1673
Plague, immunity from, enjoyed by Shanghai, 1735
Plague in Egypt, 1087
Plague in Hong Kong, 598, 823, 1170, 1299, 1443, 1585, 1673, 1828
Plague in India, 37, 193, 396, 467, 541, 758, 839, 904, 930, 1018, 1083, 1153, 1170, 1309, 1451, 1538, 1614, 1754, 1821
Plague in Johannesburg, 1523
Plague in New South Wales, 1069, 1388, 1825
Plague in the Mauritius, 112, 177, 248, 319, 384, 456, 527, 598, 673, 741, 823, 892, 951, 1070, 1141, 1223, 1367, 1585, 1673
Plague in Queensland, 1069, 1088, 1825
Plague, inoculation for, 335 1083, 1170
Plants (Flowering) and Ferns (Mr. J. C. Willis) (review), 1662
Plants which induce eczema (Mr. J. Maiden), 1208
Plastic operation for formation of new scrotum, 1793
Platt, Mr. J. E., pyloric obstruction, 1122
Playfair, Dr. D. T., obituary, 474
Plants, the action of anæsthetics on, 108; movements of, 1815
Plastic surgery, uses of paraffin in (Mr. Stephen Paget), 805
Pleura and lung, sarcoma of the (Dr. H. W. Syers), 1654
Pleural empyema (Dr. R. J. M. Buchanan), 1281
Pleurisy, radioscopic and radiographic appearances in, 568
Pleuro-pneumonia in cattle, and Prof. Nocard, 615
Plimmer, Mr. H. G., organisms of monkey malaria and sleeping sickness, 434; treatment of cancer with radium bromide, 1046
Plumbers' examination at King's College, 1245
Plumbers, registered, of the Aberdeen district, 13[illegible]5
Plumbers' Registration Bill, meeting at the Memorial Hall, 133
Plummer, Dr. S. W., double multilocular cyst of the ovaries, 1351
"Plurality of dysentery," 317
Plymouth Hospital Sunday Fund at, 127
Plympton St. Mary rural district, report of the medical officer of health of, 1079
Pneumatic saddle cover, 1319
Pneumococcal peritonitis, 159
Pneumococci, virulence of, 1613
Pneumococcic infection of the eye, 1519
Pneumococcus ulcerative endocarditis, 1561
Pneumonia, administration of opium in, 517, 757
Pneumonia in early life (Dr. Edgar Duke), 1017
Pneumonia in New York, 342
Pneumonia, lobar, a case of, 150; 70 cases of, 496; 200 cases of, 1643; septic 1278; "latent," 1652; use of alcohol in cases of, 1672
Pneumotherapy (Dr. P. L. Tissier) (review), 441
Pneumothorax, paracentesis and the use of the aspirator in, 751; a case of, with rapid recovery, 1052
Poe and his misunderstood personality, 695
Poems, New (review), 1132
Pointing, Mr A. L., antidipso, 110
Poirier, Professor P., The Lymphatics (review), 236
Poirier de Narçay, M., water-supply of Paris, 901
Poison of the Banded Krait, Some Observations on the (Capt. George Lamb, I.M.S.) (review), 877
Poisoning by hyoscine hydrobromate, 24; by hellebore, 42; by sulphonal, 219 1016; by veronal, 223, 696, 1616; by picric acid in the treatment of burns, 247; by salicylic acid, 432; by antinomy and lead, 437; carbon monoxide, by the inhalation of cigarette smoke, 395; by mussels, 472; carbon monoxide and water-gas, 614, 938, 1427, by chloral, at Portsmouth Lunatic Asylum, 663; by tinned salmon, 899; by cocaine, 1022; by carbolic oil, 1279; by coal gas, 1427; by cantharides, 1427; by naphthol camphor, 1617; ptomaine, by fish, 1653; chloroform, 1657; by illuminating gas, 1739; by phosphorus, 1763
Poisoning in its medico-legal aspects, 548; criminal cases of, 622
Poisons Bill for India, 541
Poisons, the sale of, 589, 693, 904, 1388
Poley, Mr. A. P., A Guide to the Housing Acts (review), 237
Police, the, and medical privilege, 535
Poliomyelitis, acute anterior, 439
Politics in an asylum, 957
Polycythæmia with enlarged spleen and probably disease of the bone marrow (Dr. F. Parkes Weber and Mr. J. H. Watson), 803, 1203
P[illegible]
P[illegible] the base of [illegible] sion of the upper jaw (Mr. F. A. Southam), 989
Polson, Dr. J. Ronald, presentation to, 202
Polypi, multiple, of the intestine, chronic intussusception due to (Dr. Mabyn Read), 797
Ponto-medullary tract, tuberculous nodule in the, 1356
Pontypool, Poor-law administration in, 196
Pooley, Mr. William, gastrostomy for stricture of the œsophagus, 1722
Poor (see also Pauper)
Poor, the homeless, of the metropolis, 813
Poore, Dr. G. V., Essays on Rural Hygiene (review), 32
Poorhouses and relief stations, Capt. Murray's scheme for, 461
Poor-law (see also Guardians)
Poor law conference at Malvern, 1384
Poor-law institutions, visiting physicians at, 965
Poor-law medical officers, the position of, 314; and superannuation, 454
Poor-law medical relief in Scotland, 1219, 1695; in Shropshire, 1829
Poor-law medical service, in Ireland, 39, 263, 730, 962, 1540, 1690; in Scotland, 102, 318; in Lambeth, 1740
Poor laws on the Continent and in America, 135
Poplar, metropolitan borough of, report of the public health committee of, 955
Population question in France, 888
Pork, diseased, the sale of, 327
Porpoise, studies of the, 238
Port Elizabeth Provincial Hospital, 767
Porter, Dr. A. E., prophylactic injections of antitoxin against diphtheria, 1207
Portishead urban district council, 1316
Portrush Cottage Hospital, 1160
Portsmouth, isolation of scarlet fever patients at, 450
Portsmouth (Royal) and Gosport Hospital, 133, 638
Portsmouth Lunatic Asylum, chloral poisoning at, questions in Parliament regarding, 624, 768; adjourned inquiry concerning, and verdict of jury, 663
Portugal as a health resort (Dr. D. G. Dalgado), 657
Post-anæsthetic coma, 806
Post-graduate work abroad, 47, 465
Post Office and "Dr." Bell, 1371
Post Office staff, health of, 549, 1829
Post-turbinal snare (Dr. Mackay MacDonald), 1133
Potassium bitartrate (see "Cream of tartar")
Potatoes, profitable, 770
Potter, Dr. E. Furniss, adenoid growths, 804, 1507
Potts, Dr. W. A., care of the feebled-minded, 1019
Powell, Mr. S. Arthur, guinea-worm, 576
Powell, Sir R. Douglas (Bart.), sanatorium treatment, 1202
Power, Mr. D'Arcy, Who performed lithotomy on Mr. Samuel Pepys? 1011
Powerscroft, Lord, death of, 1690
Poyntor, Dr. F. J., rheumatic fever, 96, 1352
Practice, the sale of a, litigation over, 606; law relating to, 1821, an ill-advised bid for, 1094; private, in Germany, 1066; unqualified, under the cover of a limited company, 1147
Practitioner (see General practitioner
Practitioner, The (review), 514, 811, 1133, 1433, 1800
Practitioners, unqualified, police regulations regarding, issued in Lübeck, 1008
Praiseworthy fad, a, 318
Precipitin of cobra venom (Capt. George Lamb, I.M.S.), 916
Pregnancy, tubal, rupture of a, on the nineteenth day after conception (Dr. W. Duncan), 563, 581; three cases of (Dr. Nathan Raw), 937; hydroa during (Dr. C. A. D. Bryan), 1570
Prehistoric therapeutics, 551; remains at *Cheddar*, 1616
Preiswerk, Dr. Gustav, Zahnheilhunde (review), 307
Premature discharge of scarlet fever patients, 175
Preputial or odoriferous glands of man, 146
Prescott, Prof. Samuel Cate, Elements of Water Bacteriology (review), 1510
Prescriber's Pharmacopœia (Kemp and Co.) (review, 729
Prescribing and Dispensing in Medical Practice (Dr. B. G. Morison, 1008 (see also under Medicines, dispensing of)
Prescription, a mistake in a, death from, 613
Prescription and advice, 522
Prescriptions and handwriting, 669
Prescriptions, translations of, 204, 345

PRESENTATIONS AND TESTIMONIALS.—To Dr. A. J. Barker, 133; to Mr. H. C. Shann, 133; to Dr. S. G. Morris, 133; to Dr. and Mrs. J. Ronald Polson, 202; to Dr. G. P. Rugg, 331; to Mr. C. F. Sutton, 331; to Dr. John Robertson, 405; to Dr. W. P. Johnstone, 477; to Dr. E. Malins, 584; to Prof. Bouchard, 616; to Mr. Charles F. France, 620; to Mr. Ernest R. Evans, M.R.C.S. Eng., 837; to Dr. Constantine Holman, 891, 1006, 1015, 1093, 1139, 1172, 1250, 1320, 1396, 1474, 1546; to Prof. J. W. Byers, 892; to Dr. Thomas Clarke, 960; to Dr. A. Hodgkinson, 1019; to Mr. Sidney C. Lawrence, 1091; to Dr. Richard Julyan George, 1246; to Dr. Archibald Shaw, 1391; to *Mr. H. F. Devis*, 1468; to Mr. F. W. S. Stone, 1468

Preservatives in food, 122, 162, 199, 399, 618, 764
Preventive measures against tuberculosis, the relation of the medical practitioner to, 282
Prévost, Regimental Surgeon, 523
Price, Mr Arthur Edwin, 898
Priest, a courteous, 1171
Prime Minister, health of the, 452
Pringle, Dr. Harold, Pawlow's gastric fistula operation, 438
Printing, physiotype, 1815
Prior, Mr. Edward S., some remarks on pathological schools, 1225
Prisoners, power of, to injure themselves, 1585
Prisons, tuberculosis in, 692
Pritchard, Dr. G. Eric C., transposition of the viscera, 438; congenital absence of left arm, 438; Physiological Feeding of Infants (review), 809
Private practice in Germany, 1066
Prizes, awarded or offered, medical, of the Paris Academy of Sciences, 319; Craggs's Research, 597; Royal College of Surgeons in Ireland, 1024; Royal Naval Hospital, Haslar, 1076; Astley Cooper, 1138; Jacksonian, 1146; Parkes Memorial, 1222; St. Thomas's Hospital Medical School, 1246, 1585; London (Royal Free Hospital) School of Medicine for Women, 1743; St. Mary's Hospital Medical School, 1743; *Barker Anatomical of R.C.S.I.*, 1763; Royal Dental Hospital of London, 1810
Profeit, Dr. A. C., Army Inefficiency (review) 372
Profession, organisation of the, at Southampton, 468; at Manchester and Salford, 1307
Professional ethics, 254
Professional secrecy in America, 180
Pronation, the painful, of childhood, 820, 1015
Pronger, Mr. C. Ernest, Errors of Refraction and the Nervous System (review), 1663
Properitoneal hernia (Mr. H. Betham Robinson), 724
Proptosis, 367
Prosecutions (see also Medicine and the Law)
Prosecution of medical men, 543, 605; for refusing to serve an Inspector under the Sale of Food and Drugs Act, 177
Prostate, extirpation of the, total, 223, 225; modern surgery of the, 300; normal and enlarged, 869; enlarged, anatomy of, 1650
Prostatectomy, three cases of (Mr. W. H. Allingham), 1279
Protagon, cholin, and neurin (Mr. W. Cramer) 1051
Protection societies, medical, 668
Proteid dietary, effects of a (Dr. D. Chalmers Watson), 1352
Protene foods, 730
Provident dispensaries, 614
Proximus ardet Ucalegon, 105
Prudential Assurance Company, annual report, 838
Prussia, enteric fever in, 1370, 1427; public health in, 1692
Prussic acid, formation of, by the oxidation of albumins, 1443
Pseudo-appendicitis (entero typhlo-colitis, intestinal lithiasis) (Dr. Bottentuit), 1113
Psychic side of therapeutics (Dr. J. F. Woods), 489
Psychical Research, Society for, and Mrs. Piper (review), 1431
Psychology, British Journal of (review), 514
Psychoses, prodromata of the, 1141
"Psychosis polyneuritica" (Korsakoff's disease), 819
Ptomaine poisoning, and the death of a medical man, 614; by fish 1653 (see also Poisoning)
Ptosis, spectacle frame for, 586
Puberty, premature, 1204
Public affairs and public health, 445
Public health, official status of, 1802
Public Health Act, a point under, 444; the new, in France, 1461

Public Health Acts Amendment Bill, 1247, 1828, 1829
Public health appointment, at Burton-on-Trent, 1159
[illegible] of
[illegible] of
[illegible] W. Moore) 655
Public House Trust Association (the Central), 1024
Public, the, and the medical profession, 36
Public Schools Science Masters' Association, 243
Public Schools Year-book, 1904 (review), 1061
Public vaccinators, fees of, 50, 1067; and the Greenwich Board of Guardians, 1247
Puerperal eclampsia, nine cases of, 368; 41 [illegible] Col.
[illegible]
[illegible] treatment [illegible] ations of, [illegible] ber), 924; [illegible] Dr. C. J. [illegible]
Pulmonary tuberculosis, tuberculous deposit in the spinal cord in the course of, 1671
Pulmonary vessels, action of drugs on, 163
Pulse, reflex effects on the, 199
Puncture, lumbar, in diseases of the ear, 128
[illegible] iodide of
Purification of Sewage and Water (Mr. W. J. Dibdin) (review), 809
Purin bodies and their metabolism (Dr. W. Gordon Little), 838
Purin Bodies of Foodstuffs and the Rôle of [illegible] (Dr. I. [illegible]
[illegible] A. von [illegible]; orthostatique (M. C. Achard and M. H. Grenet), 947
Purslow, Dr. C. E., cystic tumour of the uterus, 581
[illegible] in Thera- [illegible] Stevens) 935
Pylorus, stenosis of the, congenital hypertrophic (Dr. E. Cautley), 645
Pyometra, a case of, 227
Pyopneumothorax due to pulmonary tuberculosis, 655; a case of (Prof. D. W. Finlay), 1572
Pyosalpinx, cases of, 905
Pyrexia in the course of late syphilides, 658

Q

Quack medicines, French, 204, and deaths, 1008
Quackery, the prevalence of, 269
Quack, lecture of a, 407, advertisement of a, 1171; heavy fine inflicted upon a, 1222; [illegible]
Qualifications, medical, in Germany, 965
Quarantine against small pox in New Zealand, 764, 1162
Quarantine in Victoria, Australia, 1162
Quarantine Board of Egypt, 597
Quarantine for Indian pilgrims to Mecca, 1018
Quarterly Journal of Microscopical Science (review), 33, 1214
Quebec making medical men by Act of Parliament in, 1761
Quebec Protestant Hospital for the Insane, 618
Queen Charlotte's Lying-in Hospital, London, 290, 963, 1776
[illegible]
Queensland, plague in, 1069, 1088, 1825
Quincke, Dr. Heinrich, Diseases of the Liver, Pancreas, and Suprarenal Capsules (review), 1283
Quinton, M., chemical constitution of living beings, 1085

R

Rabagliati, Dr. A. C. F., cancer, 658
Rabbit's heart, an excised, perfusion of, with an oxygenated Ringer's solution, before the King and Queen, 825
Rabies, 662
[illegible] 1674
Radio-activity and the ether, 590
Radio-activity of the animate as well as the inanimate, 101
[illegible] in [illegible] of [illegible] nd [illegible] les [illegible] in
Radio-therapeutic applications, the dangers of, 901
Radium and all about it (Mr. S. R. Bottone) (review) 1576
Radium at Bath, 109, 192; the revelations of, 245; treatment of cancer by, in New York, 342; treatment of carcinoma of the œsophagus by, 403; gift of by the Lord Mayor of Belfast, 473, the action of, as an analgesic and nerve tonic, 632; two cases of rodent ulcer treated by, 794; tuberculous ulceration treated with, 872, treatment of cancer with 1046; and x ray photography, 1731; experiments with, 1815
[illegible] orth [illegible] the
[illegible], Dr. W., powers of the General Medical Council, 1750
Ramsey, Dr. R., *surgical dressing materials*, 1209
Rand, diseases on the 1471
Randall, Mr Wyndham, Penybont health report, 1084
Ranking, Lt.-Colonel G., mistletoe, 756
Rare defence, a, 595
[illegible] and the [illegible] lts of the [illegible] and goats, 1395
"Raubeneck" white wine, 373
Raw, Dr. Nathan, *fatal gestation*, 297, 937, puerperal septicæmia, 457, method of infection of the human body by the tubercle bacillus, 1209, prevention of consumption in large cities, 1239
Raw, Dr. Stanley, hernial troubles in an infant, 225
Rawling, Mr. Louis Bathe, fractures of the skull 973, 1034, 1097
Raynaud's disease, with splenomegaly, 656, a fatal case of, 1349
Rayne, Dr. C. A., opium and pneumonia 757
Rayner, Dr. Henry, medical practitioners and *dispensing*, 333
Rays, muscle and nerve 402, 526, 610, 685, 831, [illegible] 1082, 1150
Rays, ethereal, of all kinds, 1731
Rays, the Roentgen (see ROENTGEN RAYS)
[illegible]
Reclus, Dr. Paul, a new appointment for, 963
Recoveries, remarkable, after apparent death, 1005, 1152
Recruiting, army, 330, 392
Rectal prolapse treated by injection of paraffin, 440
[illegible]
Red Indians, an experience among, 611
Red light in the treatment of small pox (Dr. J. T. C. Nash), 616
Red nose, 842
Red or black ink for placards? 135, 204
Referred pain in visceral disease (Dr. W. M. Willoughby), 1048, 1218
[illegible] W. N [illegible] orrection [illegible] Influence [illegible] *Pronger*)
Refrigeration in the Dairy (Mr. L. M. Douglas) (review), 1731
Refuge Assurance Co., Ltd., and its medical advisers, 852
[illegible] 147 [illegible] nts, [illegible]
Registration, State, of Nurses, 549, 622, 671, 693, 948, 1009, 1140, 1160, 1444
[illegible] ne at Oxford [illegible] "Eugenics," [illegible]
Reid, Dr. W. L., Uterine prolapse and retroflexion, 997
[illegible] ra in [illegible] tem- [illegible]
Relations of pulmonary tuberculosis to other diseases (Dr. F. Parkes Weber), 924
Relations of the general practitioner to the consultant, 239, 334
Relief, Home (the International) Congress, 1743
[illegible] 1651
Renal hæmaturia produced by terebene (Surgeon R. J. Mackeown, R.N.), 652
Renal headache, operative treatment of (Dr. Stuart Tidey), 1016
[illegible] 1111, 1218
Renton, Dr. J. Crawford, acute appendicitis, 301, facial paralysis and Kraske's operation, 875
Rentoul, Dr. R. R., Proposed Sterilisation of Certain Mental and Physical Degenerates (review), 1132
[illegible]
Resorts, some English, winter's weather at, 1070
Respiration, artificial, apparatus for maintaining, 515, of gases, 1264
Rest, a, for flexion of the thighs after abdominal operations (Mr. A. Z. C. Cressy), 1064
Rest, Mental Therapeutics, Suggestion (Dr. Francis X. Dercum) (review), 1210
Restaurant kitchen and bakehouse, sanitation in the, 744
Resuscitations remarkable, 1005, 1152
Retina, studies in the, 33; endothelioma of, 938
Retina and optic nerves in anencephaly (Mr. M. S. Mayou) 1354
Retinal retinitis, 166
Retinal veins, compression of the (Mr. J. R. Lunn), 801
Retiring age for professors, physicians, and surgeons, 326
Retractor for intracranial operations (Dr. Donald Armour), 879
[illegible] 523, [illegible] re- [illegible] yo), 1317

Revaccination of children in lunatic asylums, 466
"Revelations of radium," 245

REVIEWS AND NOTICES OF BOOKS.

Sir Henry Wentworth Acland, Bart., K.C.B., F.R.S., Regius Professor of Medicine in the University of Oxford; a Memoir: by J. B. Atlay, 30—The Practical Study of Malaria and other Blood Parasites: by J. W. W. Stephens, M D. Cantab, D.P.H.; and S. R. Christophers, M.B. Vict., I M S, 31—Hypnotism, its History, Practice and Theory: by J. Milne Bramwell, M B, C.M. Edin., 32—Essays on Rural Hygiene: by George Vivian Poore, M.D., F.R.C.P. Lond.; third edition, 32—The Medical Examination for Life Assurance: by F. de Havilland Hall, M.D., F.R C.P. Lond.; third edition, 33—Traité d'Hygiène; Procédés Rapides de Recherche des Falsifications et Altérations: par le Dr. P. Smolensky; Traduction de russe par S. Broido et A. Zaguelmann; Annotée par L. Guirard et A. Gautie, 97—Encyclopædia Medica; vol. xiii.; Ulceration to [illegible] Alcohol: by S[illegible] Consider the [illegible] 99—Leonora: [illegible] Physical Remedies: by H. H. Hulbert, M.R.C.S. Eng, L.R C.P. 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[illegible] Departments of the Government of India: by Captain George Lamb, M.D. Glasg., I M.S, 877—The Treatment of Certain Malignant Growths by Excision of the External Carotids: by *Robert H. M. Dawbarn*, M D., 877—The Life of Frederick William Farrar: by Reginald Farrar, 877—Aids to Surgery: by Joseph Cunning, M.B., B.S. Melb., F.R.C.S. Eng., 878—High-frequency Currents in the Treatment of Some Diseases: by Chisholm Williams, F.R.C.S. Edin., M.R.C.S. Eng., 878—Surgical Notes from Four Continents and the West Indies: by Nicholas Senn, M.D., 878—The Still Room: by Mrs. Charles Roundell and Harry Roberts, 878—Aperçu Historique sur l'Hygiène en Belgique depuis 1830: by Professor and Dr. Hyac Kuborn; second edition, 939—Pheasants, their Natural History and Practical Management: by W. B. 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er by
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PERIODICALS.—Quarterly Journal of Microscopical Science, 33—Journal of Physiology, 33, 1001, 1061, 1433—Journal of Anatomy and Physiology, 238, 1213—School: a Monthly Record of Educational Thought and Progress, 372—The Monthly Review, 443—British Journal of Psychology, 514—The

Quarterly Review; vol. i., No. 3, 1731—
Birmingham
Journal o
Electrical
Scientific
Photography, 1800

Reyes, Dr. Sanchez, and food in warm climates, 739
ncer

ady

Rheumatic infection, some clinical aspects of, the, 565

65

Richardson, Mr. W. G., Jacksonian epilepsy, 1795
Richmond, Dr. G. E., 673

"Rickets, fœtal," 1369
Ricketts, Dr. T. F., causation of small-pox, 1296
Riddell, Mr. J. R., rodent ulcer, lupus, &c., treated by the x rays, 1209
Riddell, Mr. J. S., A Manual of Ambulance (review), 1730
Rideal, Dr. Arthur H., an ideal army, 538
Rideal, Dr. Samuel, Disinfection and the Preservation of Food (review), 728
Rider, Dr. Alonzo G., perforated duodenal ulcer, 1425

Roberts, Mr. Arthur, instrument for the removal of foreign bodies from the nose, 1002
Roberts, Mr. Harry, the Still Room (review), 878
Robertson, Dr. D. Argyll, retirement of, 262, 400
Robertson, Dr. John, presentation to, 405
Robertson, Mr. W. G. Aitchison, a multiple stethoscope, 731
Robin, Mons. Albert, typhoid fever, 341; therapeutic uses of peroxides, 1161
Robinson, Dr. M. K., control of measles, 1058; mortality statistics of measles, 1128
Robinson, Mr. Henry, obituary, 547
Robinson, Mr. H. Betham, intraperitoneal rupture of the bladder, 219; properitoneal hernia, 724; ulcerative colitis, 1118
Robinson, Mr. Mark, Urine Testing for Nurses and Others (review), 729
Robson, Mr. A. W. Mayo, hour-glass stomach, 5; diseases of the pancreas, 773, 845, 911; peptic ulcer of the jejunum, 1056
Rockliffe, Dr. W. C., some exceptional ophthalmic cases, 1354
Roden, Dr. P. A., Droitwich brine baths, 1010
Rodent ulcer, notes on two cases of, treated by radium (Dr. A. Stanley Green), 794
Rodgers, Frank, the case of matricide), 1677
Rodgers, Maxwell, Inspector General, R.N., death of, 1748
ROENTGEN RAYS.—The rays in the treatment of cutaneous disease, 161; in the diagnosis of kidney stones, 163; in the diagnosis of pulmonary tuberculosis, 1426; the action of, on animal tissues, 341; treatment of sarcoma with, 403; in the treatment of lupus, 503, 874, 997, 1659; action at law for negligence in application of, 576, 544; 10 various cases treated by, at the Western Infirmary, Glasgow, 580; malignant disease treated with, 872, 1209; cancer of the skin treated by, 1065; actinomycosis treated by, 1126; carcinoma, treated by, 1235, cancroid-

treated by, 1235; in the treatment of recurrent cancer of the breast, 1426; and high-frequency electricity treatment, action at law regarding, 1440; burning from, 1536; treatment of epitheliomata by, 1691; and radium photography, 1731; worked from the supply main, 1731
Roentgen rays department at the Royal Southern Hospital, Liverpool, 1383; at the Skin Hospital, Birmingham, 1615
Roentgen Rays in Therapeutics and Diagnosis (Dr. W. A. Pusey and Mr. E. W. Caldwell) (review), 999
Roentgen rays (see also Radiologie, Radiography)
Rogers, Capt. Leonard, snake venom and antidotes, 349
Rogers, W., Staff Surgeon, R.N., the late, 1149
Rolleston, Dr. H. D., exophthalmic goitre and acromegaly, 741; "internal secretion," 799
Roman Forum, Recent Excavations in the (1898–1904) (Mrs. E. Burton Brown) (review), 811
Roman letter "M," substitution unmasked by, 44, 107, 136
Roman oculist seals, two new, 175
Roocroft, Mr. W. Mitchell, gastro-jejunostomy for cancer of the stomach, 1209
Roper, Mr. H. J., intussusception, 1207
Roper, Mr. William, croton oil and pilocarpine, 1349
Rorie, Dr. James, resignation of, and grant of honorarium to, 340
Roscoe, Sir Henry, graduation jubilee of, 1311; report of, on sewage effluents, 1464
Rose, Mr. Percy, The Midwives Act, 304, 356
Ross and Cromarty, hospital accommodation in, 1695
Ross, Dr. F. W., Forbes, motor-cars for medical men, 842
Ross, Dr. Hamilton, death of, 1021
Ross, Prof. Ronald, continuous clinical temperature charts, 586; and malaria at Ismailia, 672, 689, 1372
Ross, Surgeon E. H. (R.N.), bilharzia hæmatobia, 687
Rotch, Dr. T. M., Pediatrics (review), 1575
Roth, Dr. Henry, thyroiditis, 949
Roth, Mr. P. B., treatment of scoliosis, 302
Rothwein, Diätetischer, 373
Rotunda Hospital, Dublin, and the Central Midwives Board, 457
Rouen, meeting of the National Periodic Congress of Gynæcology, Obstetrics, and Pediatrics at, 963, 1240
Roughton, Mr. E. W., intestinal obstruction with gangrene of the cæcum, 510
Roundell, Mrs. Charles, the Still Room (review), 878
Rowlands, Mr. R. P., Congenital malformation and deformity, 1204
Rowley, Mr. O. F., and an appointment, 970
Rowntree, Mr B. S., 813
Royal Academy of Arts, 1227
Royal Academy of Medicine in Ireland and the Central Midwives Board, 692; and the office of general secretary to the Academy, 1160
Royal Albert Asylum, Lancaster, 1823
Royal Army Medical College, 1393
Royal Army Medical Corps (see also Services)
Royal Army Medical Corps, examination, pass list, 391
Royal Army Medical Corps Manual, 331; Journal of the, 1683
Royal Army Medical Corps, the future of the, the bearing of the War Office changes on, 752
Royal Army Medical Corps, the work of the officers of the, and the Director-General, 462
Royal Berkshire Hospital, the management of, 739
Royal Botanic Society of London, 374
Royal British Nurses' Association, 1150
Royal College of Physicians of London, presentation by Dr. H. Dobell, 378; comitia, 389, 1238, 1455; lectures for year 1904, 454; election of president, 954; pass list, 1244
Royal College of Surgeons of Edinburgh, passes, 966
Royal College of Science and medical education, 1584
Royal College of Surgeons of England, pass-lists, 62, 621, 1761; meetings, 249, 535, 825, 1146, 1456, 1733; lectures for year 1904, 316; list of members admitted, 621; election to the council of, 1214, 1373, 1681, 1803; dinner of, 1316; and the inspector of the General Medical Council, 1604; Fellows' dinner, 1681; examiners appointed, 1733
Royal College of Surgeons of England: some regulations of, in the year 1824, 598; Hunterian lectures of, 485, 555, 559, 629, 632, 703, 773, 845, 911, 973, 1034, 1097; death of Mr. Edward Trimmer, 1826
Royal College of Surgeons of England, Members of, Society of, 267
Royal College of Surgeons in Ireland, annual dinner, 201, 545; pass-list, 621, 965, 1543; awards of prizes, 1024; election of examiners, 1091, 1316; general meeting and election of officers, 1391; academical costume, 1523; annual meeting of the Fellows, 1693; Barker anatomical prize, 1763
Royal Colleges of Physicians and Surgeons, Examining Board in England by the, pass-lists, 620, 1315
Royal Colleges of Physicians and Surgeons of Edinburgh and Faculty of Physicians and Surgeons of Glasgow, pass-list, 1089, 1245, 1468
Royal Colleges of Physicians of Edinburgh, 458, 1374
Royal Commission on feeble-minded persons, 967
Royal Commission on sewage disposal, fourth report of the, 166, 742 1299, 1449; statement of the work of the, 1091
Royal Commission on tuberculosis, 768; interim report, 1580
Royal Dental Hospital, report, 766; prizes, 1810
Royal Devon and Exeter Hospital, 614
Royal Edinburgh Asylum for the Insane, report, 761
Royal Institute of Public Health and Rt. Hon. Joseph Chamberlain, M P., 1742
Royal Institution, lectures at the, 876; general monthly meeting of members of, 1391; and Mr. Andrew Carnegie, 1694
Royal London Ophthalmic Hospital Reports (review), 166; centenary of, 244; dinner, 527, 966
Royal Masonic Benevolent Institution for the Widows of Freemasons, 1535
Royal Masonic Institution for Boys, 396
Royal Meteorological Society, a paper on the population and rainfall of India read at the, 1172; exhibition at the Royal Society, 1815
Royal Microscopical Society, 177, 673
Royal Military Tournament, 1534, 1609
Royal National Pension Fund for Nurses, 1316
Royal Naval Hospital, Haslar, distribution of prizes 1076
Royal Navy, health of the, 650
Royal Navy list, 330, 1150
Royal Navy Medical Service, Director-General of the, post of, 1748; (see also Services)
Royal North Shore Hospital, Sydney, report, 765
Royal Prince Alfred Hospital, Sydney, 1825
Royal Society, Fellowship of, candidates selected for, 673; conversazione, 1455; second conversazione, 1815
Royal Southern Hospital, Liverpool: the tropical diseases ward, 543; nursing institution, 1238
Royal Statistical Society and a proposed census in 1906, 812
Royal Mineral Water Hospital, Bath, 1384
Royal Waterloo Hospital for Children and Women, 343, 495, 1169, 1391
Rugg, Dr. G. P., presentation to, 331
Rupture and "Dr." W. S. Rice, 1473
Rupture of a tubal pregnancy on the nineteenth day after conception 563, 581
Rural depopulation, 759
Rural districts, midwives in the, 387
Rural Midwives Association, conference convened by, 387
Rusks, Dutch, 1360
Russell, Dr A. E., hæmaturia, 936
Russell, Dr. J. S. Risien, myasthenia gravis, 1205; tumours of the spinal cord, 1208
Russell, Dr. James W., after-history of gastric ulcer, 288
Russell, Dr. William, acute appendicitis, 787
Russell, Mr. R. Hamilton, 733
Russia or Russian: medical congress dissolved by the police, 397; engineers' splendid contribution to the Red Cross Society, 751; military hospital train, 751; Red Cross Society and Greek medical men, 1081; Medical Council, centenary of the, 1197, 1369; malaria and influenza in, 1243; lady doctor's enterprise, 1305; army, dentistry in the, 1305; alienist, a notable, death of, 1316; education in "first aid" for women, 1342; medical man ("Veresaeff") on medical practice, 1436; red cross exhibits for Paris, 1458; south-east, a new university for, 1619; mud baths, 1674; dilapidated hospital buildings, 1733; morphine habit, 1832 (see also St. Petersburg, Kharkoff, Services)
Russo-Japanese war, 691, 751, 957, 1015, 1081, 1150, 1234, 1304, 1377, 1458, 1534, 1609, 1683, 1749, 1819

S

Saccardo system of ventilating railway tunnels, 592
Sachs, Dr. Ernest, amaurotic family idiocy, 1807
Saddle cover, pneumatic, 1319
Sailors and soldiers in lunatic asylums, 1247
St. Bartholomew's Hospital and the Post Office, 41; the rebuilding of the hospital, 174, 248, 317, 331, 782, 965, 1672; and His Majesty the King, 1674; donation to the hospital, 201; meeting of students in 1826, 238; meeting at the Mansion House, 309; a rare case of intussusception at, in the year 1826, 745; Sir W. P. Treloar's book on the hospital, 1224
St. George's Hospital, the site of, 1816
St. George's Hospital Lodge of Freemasons, proposal for formation of, 598
St. Helen's Sanatorium, 1690
St. James's Gazette and the state of the medical profession, 1217
St. John of Jerusalem, Order of the Hospital of, promotions, 741
St. Mary's Hospital, Manchester, 1693
St Mary's Hospital Medical School, London, 1743
St. Petersburg, vital statistics of, 1543
St Thomas's Hospital Medical School, 1246, 1587
Salaman, Dr. R. N., epithelioma of the cervix, 97
Sale of Food and Drugs Act, 177; convictions under, for selling grain spirit as brandy, 593
Sale of Food and Drugs Acts, with notes and cases (Sir W. J. Bell, Mr H. S. Scrivener, Mr. C. F. Lloyd) (review), 514
Sale of Poisons, 589, 693, 904
Salford Royal Hospital, 1615
Salicylic acid poisoning, 432
Salicylic acid preparations, '34; in food, 122
Saline baths, normal, 29
Saline injections, value of, in certain acute cases of mental disease (Dr. J. R. Gilmour), 1126
Salisbury *v.* Gould, 327, 395
Salkowski, Dr. E., Physiological and Pathological Chemistry (review), 1729
Salmon, tinned, poisoning by, 899
Salpingitis, acute suppurative, conservative operation in, 250; cases of, 995
Salsomaggiore and its baths, some impressions of, 571
Salt, Mr. W., testing the eyesight of the nation, 1306
Salt tax in India, 1810 (see also Sodium chloride)
Salts and nucleo-proteid, intravascular injection of, 1002
Sambon, Dr. L., sleeping sickness, 228, 233
Samways, Dr. D. W., medical profession and dispensing, 392
Sanatorium (see also Anti-sanatorium)
Sanatorium Al Hayat, Helouan, 901
Sanatorium and Convalescent Home, Heatherside, 1801
Sanatorium, Bellefield, Lanark, 1539, 1757
Sanatorium, Birmingham and Midland Counties, report of, 759
Sanatorium chair, a new (Dr. D. Lloyd Smith), 1134
Sanatorium for consumptives (proposed) at White Abbey, 263; for Middlesex, 1794; in Victoria, 1825
Sanatorium for tuberculous patients, opposition to a, 546
Sanatorium, Muskoka College (Canada), 618; in Nova Scotia, 1760; provincial, in Canada, 1760
Sanatorium treatment of pulmonary tuberculosis (Dr. C. T. Williams), 278; Are we on the right track? (Dr. G. H. R. Dabbs), 394; Severe criticism of the Heswall scheme, 689, 737; views of Mr. S. Noy Scott on, 1079; for the working-classes, 1201, 1291, 1379 (see also Sandgate)
Sanatoriums, Norwegian, 1622
Sanatoriums (see also Consumption, prevention of)
Sand ripples, 1815
Sanders, Dr. A. W., enteric fever, 1723
Sanders, Mr. Thomas, the late, 1762
Sanderson, Sir John Burdon, a new appointment for, 721
Sandgate scandal, 527, 1522, 1688, 1752, 1821
Sandwith, Dr. F. M., 1810
Sangster, Dr. John Herbert, death of, 618
Sanguinosa, 730
Sanitary Assurance Association, 548
Sanitary authority and the medical officer of health, 732
Sanitary inspectors, certificates applied for and granted, 549; in rural districts, 1539
Sanitary Inspectors' Examination Board, examination at Liverpool, 1084
Sanitary Institute: lectures, 173; congress in Glasgow, 451; lectures under the auspices of the Childhood Society, 666; municipal rehousing, 892; food and meat inspection, 1144; meeting at Cardiff, 1238; dinner of the, 1295

Sanitary Maritime and Quarantine Council of Egypt, 597
Sanitary measures in India, 1153
Sanitary powers, increased, a plea for, 476
Sanitary preparations, exhibition of some, 1527
Sanitary service, inspector-general of, *Paris*, 243
[illegible]
Sarcoma of the cerebellum, 1429
[illegible]
Saunders, Dr. E. A., albuminuria, 509
Saunders, Dr. George Richard, obituary, 1390
Savill, Dr. Thomas D., hysterical skin symptoms and eruptions, 273; *arterial hyper-* [illegible]
[illegible] psy in [illegible]
[illegible] *fever*, [illegible]
Scaphoid bone, fracture of the, 1582
Scarenzio, Prof. Angelo, tribute to, 1297
Scarlatinal infection and its bearing upon [illegible]
[illegible]
Scavenging, effective, the necessity for, 519
Scharlieb, Mrs., M.D., unruptured tubal pregnancy, 436
Schlesinger, Prof. H., abscess of the lungs, 403; adrenalin in the treatment of hæmorrhages, 1760
Schliep, Dr., and anæsthesin for sea-sickness, 762
Schmidt, Dr. Otto, and his treatment of cancer, 684
Schnitzler, Dr. Julius, ovarian hernia with twisted pedicle in an infant, 670
[illegible]
vention of infectious diseases in, [illegible]; and epidemics, 1247; public elementary, and infant, 1616; medical inspection of, 1694
School Board for London, annual reports issued, 133, 1813; review of the work of the, 1293
School, a monthly record of educational thought and progress, No. 1, 372
School children, medical examination of, 1543; feeding of, 1743
School Children, Medical Inspection of (Dr. W. L. Mackenzie and Dr. E. Matthew) (review), 1508
School Hygiene, the *International Congress* for, at Nuremberg, 455, 672, 1011, 1072, 1086, 1151, 1156, 1457; conference on, in Toronto, 902, discussion on, at Cardiff, 1219, 1238; in its relation to education authorities, 1219
Schuschny, Prof., sexual questions in relation to school life, 1073
[illegible] Diseases of the Eye [illegible] *H. Bostock*), [illegible]
Science in boys' schools and medical education, 315
Science, New Conceptions in (Mr. Carl Snyder), (review), 811
Scientific and Learned Societies, Official Yearbook (review), 100
Scientific memoirs by officers of the medical and sanitary departments of the Government of India, 637, 659, 877, 1574
Sclerosis, disseminated, and dementia, 42; amyotrophic lateral, cerebral form of, 246; insular, 1205
Scoliosis, treatment of, 302, 465
[illegible]
Edinburgh University, rectorial address at, 262 339—General Council, 1385—Retirement of Dr. D. Argyll Robertson, 262, 400—Case of Dr. J. T. D. Macara, 263—The Students' Representative Council and the [illegible]
[illegible]
versity of Glasgow; honorary degrees, [illegible]
[illegible]
and District Branch of the National Associa- [illegible]
[illegible]
pox in, [illegible]
Scotland, appointment of a King's physician in, 761; preparation of glycerinated calf lymph in, 767; uncertified deaths in, 904; [illegible]
[illegible]
Scottish Accident, Life and Fidelity Insurance [illegible]
[illegible] Journal [illegible]
[illegible] Associa- tion, [illegible]
Scottish Poor-law medical service, 102
Scottish Volunteer Ambulance trophy, 1234
Scrivener, Mr. H. S., 514
Scrotum, traumatic gangrene of the (Mr. A. Grainger Bisset), 1793
[illegible] 657, [illegible]
[illegible], 465, [illegible]
Sea-water, a research concerning, 1085
Sea-water and shell fish, bacteriology of, 1449
Seals, oculist, Roman, 175
Seaton, Dr. E. C., enteric fever and the water-supply, 937
Seaver, Dr. Jay W., treatment of inguinal hernia by exercises, 1142
Seckenger, Dr. Phil., arrangement of schools dependent on the mental capacity of the children, 1073
Sedgwick, Prof. Adam, unveiling of a statue of, at Cambridge University, 603, 674
Seeger, Prof. Josef, death of, 403
Seeley, Prof., examination of the main channel of the Thames, 1011
[illegible] 135
[illegible] al
Semple, Lt.-Col. D. (R.A.M.C.), Annual Report of the Pasteur Institute, 1902-1903 (review), 662
Senile forms of mental failure, 821
Senn, Col. Nicholas (M.D.), First Dressing on the Battlefield (review), 582; Surgical Notes from Four Continents and the West Indies (review), 878
Senn, Mr. C. Herman, Cookery for Invalids and the Convalescent (review), 662
Septic tanks, a curious petition against, 467; [illegible]
[illegible]
Serum, the manufacture of, 1543, 1619, 1759
Serum, antidiphtheritic, administration by mouth, 124
Serum, antituberculous (Dr. Marmorek's), 824, 854, 902, 933, 979
Serum injections in India, 662
Serum treatment of scarlet fever, 264; of puerperal fever, 1759
Serums and animal extracts, treatment of disease by, 1127
Services, the naval and military medical, weekly article on, 50, 121, 185, 250, 330, 391, 461, 538, 607, 679, 750, 831, 894, 957, 1014, 1080, 1149, 1233, 1304, 1376, 1458, 1534, 1609, 1682, 1748, 1818
Seton, paroxysmal labyrinthine vertigo, alleviated by, 649, 757
Settle, Mr. T., smoke prevention at gas works, 746
Sevenoaks, weather at, in 1903, 267
Sewage and Water, purification of (review) [illegible] 909
[illegible] rth [illegible] the [illegible]
[illegible] ne, 1545
Sewell, Mr. R. B. Seymour, a study of the astragalus, 1213
Sewell, Mr. Robert Russell, the late, 1762
Sewerage of Axminster, 1077, 1762; of Christchurch (Hampshire), 1576
[illegible] hool life [illegible]
[illegible] joyed by, [illegible]
Shann, Mr. H. C., presentation to, 133
[illegible]
Shaw, Dr. L. E., London hospitals and central control, 186
Shaw, Dr. W. V., rheumatic fever, 96
Shaw, Mr. F. C., mosquitoes at sea, 396
Shaw Mackenzie, Dr. J. A., sulphonal and trional in sea sickness, 466
Sheild, Mr. A. M., sponges and forceps, 1684
Shell fish, contamination of, by sewage, 45, 742; [illegible] con- [illegible] of [illegible] 449
[illegible]
Shop hours, proposed legal shortening of, 642, 957, 1316, 1695

Taylor, Sir William prize, award of, 1015
Tea (a cup of) and beer (a glass of), the tax *upon*, 1295
Tea and coffee infuser, 1546
Teapot, patent, the S. Y. P., 1320
Teas, unwholesome, 1317
Technics (review), 584, 878
Teeth artificial, supply of, by unregistered persons 1147
Teeth, children's, the care of, 1157
Teeth, diseases of, in children, the influence of, on mental development, 1073; psychical phenomena due to, 1617
Teeth, false, and varicose veins and enlistment in the army, 767
Teeth, irregularities of the (Dr. J. Sim Wallace) (review), 1061
Teeth, *Notes on the Treatment and Filling of* (Mr. W. C. Grayston) (review), 1663
Teeth soldiers', the care of, 60
Tegetmeier, Mr. W. B., Pheasants (review), *910*
Teignmouth, isolation hospital for, 215, 1694
Temperance and hygiene as school subjects, 1143
Temperance club for soldiers and sailors at Toulon, 1149
Temperature and dreams, 695
Temperature and rainfall at some continental resorts during the winter, 736
Temperature in its relation to head injuries, 1093
Temperature charts, clinical, continuous, apparatus for obtaining, 585, 684, 1305; *emergency pocket case book*, 1766
Temporo-maxillary joint, ankylosis of, operation for, 509
Tenement children in New York and tuberculosis, 764
Tenement house reform in New York, 404
Tent, a health, 309
Teratoid tumour of the ovary (Dr. H. C. Earl), 726
Terebene, renal hæmaturia produced by (Surgeon R. J. Mackeown, R.N.), 652
Terminology, medical, and the lay press, *408*
Testicle, the fully descended, strangulation of (Mr. G. H. Edington), 1782
Testicles, extreme atrophy of (Dr. V. Warren Low), *434*
Testimonial to Dr. Constantine Holman, 891, 1006
Testimonial, unauthorised, 1094; an unfortunate, 1546
Testing the blood and the urine, a new method of (Dr. A. E. Wright and Dr. J. Newport Kilner), 921
"Testing the eyesight of a nation," 1068
Testis, retained, carcinoma probably originating in (Dr. W. Sydney Darby), 989
Testis, undescended (Mr. J. Hutchinson, Jun.), 1056
Tetanus after application of a spider's web, 1698
Tetanus, treated with antitetanic serum (Dr. H. H. Murphy), 652; (Dr. J. Rose Bradford) 934; (Dr. A. Charpentier), 1722
Tetanus treated by injections of antitoxin into the spinal theca (Mr. C. S. Wallace and Mr. P. W. G. Sargent), 612
Tetany, a new symptom in, 835
Textile factories and laundries, persons employed in, a return of, 950
Thames, pollution of the, 623; examination of the main channel of the, 1011; and the sea and shell-fish, bacteriology of the, 1299
Theatres, overcrowded, dangers of, 263; emptying, of their audiences, 444
Theca, the spinal, injection of antitetanic serum into, 642
Thénelles, the sleeping woman of, 836
Theobald, Mr. F. V., Culicidæ or Mosquitoes, vol. iii. (review), 1798
Theocin, 594; *skin eruptions consecutive to the use of*, 1769
Therapeutical Society, 892
Therapeutic or Therapeutics (see also Electro-therapeutics, Pharmacy, Surgical therapeutics)
Therapeutics, physical, some simple expedients in, 1[illegible]; psychic side of, 489; prehistoric, 551; fasting in, 1347
Therapeutics of Mineral Springs and Climate (Dr. I. Burney Yeo) (review), 1358
Therapy, Old Highland (Mr. Henry Whyte), 1062
Thermit (a mixture of aluminium and iron oxide), 548
Thermometer, clinical, a tropical, 308; an abnormal, 1396
Thermometer, platinum, and Callendar electric recorder, 585, 684
Thin Dr. George, obituary, 474
Thomas, Dr. H. Wolferstan, trypanosoma Gambiense and the trypanosomes of Uganda and Congo Free State sleeping sickness, 1337
Thomas, Mr. J. Lynn, cholecystotomy, 571
Thomas, Mr. T. Morrell, "spontaneous fracture" of the femur, 1197
Thomas, Mr. William, congenital occlusion of the œsophagus, 361
Thomas, Mr. W. Thelwall, perforated gastric ulcer, 579
Thompson, Dr. A. H., congenital coloboma of the iris, 802
Thompson, Dr. H. T., tumour of the left auricle, 1572
Thompson, Dr. J. Ashburton, leprosy in New South Wales, 1028
Thompson, Dr. J. Hilton, cigarette smoke, 395
Thompson, Mr. Walter, typhoid perforation, 160; *rupture of the intestine*, 873
Thompson, Mr. William, arsenic, 1808
Thompson, Sir Henry, London dust, 519; obituary, 1163; estate of, 1445
Thompson Yates and Johnston Laboratories Report, vol. v., new series, part 2 (review), 941
Thompson Yates, Rev. S. A., the late, 39
Thomson, Dr. Andrew, and an appointment, 970
Thomson, Dr. George, 741
Thomson, Dr. John, exhibition of cases, 1505
Thomson (J. B.), bequest and the University of Glasgow, 1539
Thomson, Mr. Alexis, anatomy of the enlarged prostate, 1660
Thomson, Mr. John (of Manchester), the late, 759
Thomson, Surg.-Col. Sir George, K.C.B., death of, 60; obituary of, 131
Thorax, left, wound of the (Mr. E. Wynstone-Waters), 1493
Thorburn, Mr. William, street ambulances for Manchester, 947, 1303
Thorium nitrate, emanations from, treatment of hypertrophic pharyngitis and laryngitis by (*Dr. J. Gordon Sharp*), 1120
Thorne (Dr. Mary), Defence Fund, 1750, 1832
Thorne, Dr. W. Bezly, obesity, 1206
Thornton, Dr. George, enteric fever, 1723
Thornton, Dr. John Knowsley, obituary, 131
Thoroughfares, London, 519
Throat and Nose, Diseases of the (review), 306
Throat, cut-, suicidal, 1687
Throat, membranous inflammations of, besides diphtheria, 669
Thrombosis, two cases of, 796; of the cavernous sinus, 889; of the jugular veins in pulmonary tuberculosis, 1010
Thumb, a very rare injury to the, 455
Thursfield, Dr. J. H., anæmia pseudoleukæmica infantum, 433; glomerular lesions of diffuse parenchymatous nephritis, 1502
Thymus, physiology of the, 1061, 1402
Thyroid and the pancreas, relation of the, to diabetes, 1820
Thyroid extract, 41 cases of puerperal eclampsia treated by, 1057
Thyroid relations in obstetrics and gynæcology, 1205
Thyroid gland, tuberculosis of, 509; debate concerning the, at the Chelsea Clinical Society 741, 798; function of the, 1308
Thyroiditis, acute suppurative, 949
Tibet mission, Phari ("The filthiest town on earth"), 1025; the medical arrangements with the, 1309; medical customs of the Tibetans, 1282; advance to Gyangtse, 1534; hardships encountered, 1613, 1735; and Buddhists, 1731
Tibia, longitudinal fracture of, 504
Tic douloureux, removal of the Gasserian ganglion for, 902
Tick fever, 382
Ticket, a circular travel, for London students, 770
Tidal estuaries, the pollution of, 742, 951
Tidey, Dr. Stuart, operative treatment of renal headache, 1016
Tierney, Dr., and an error of judgment, 1170
Tilley, Dr. H., a disclaimer, 335; frontal sinus empyema treated by operation, 1057; asthma *relieved by intranasal operation*, 1057; surgical treatment of suppurative lesions of the nasal accessory sinuses, 1414
Tinnitus, attempt to divide the eighth nerve within the skull for the relief of (Mr. Cuthbert S. Wallace and *Mr. H. J. Marriage*), 936, 1192; (Mr. R. H. Parry), 1726
Tissier, *Dr. P. L., Pneumotherapy (review)*, 441
Tissue lymph circulation (Dr. George Oliver), 892, 1175, 1262
Tobacco (see also Cigar, Cigarette, Pipe, Smoke)
Tobacco, mixtures, various, 35
Tobacco, moisture in, 1138; ash, 1671
Tobacco smoke, the poisonous constituent of, 43
Tobin, Mr. R. F., pathology of senile hypertrophy of the prostate, 725
Tomes, Mr. C. S., Dental Anatomy (review), 1575
Tongue, tinned, death of a medical man after eating, 614
Tonk, Dr. (of Christiania), and his view of scurvy, 657
Tonking, Dr. John H., perforated gastric ulcer, 91
Tonsillitis (Dr. Leslie Durno), 727
Tonsils, tuberculosis of, in children, 89
Tooth brush, Oriental fibre, 1250
Tooth-plate, impaction of a, in the œsophagus, 1824
Tooting Bec Asylum, an unfortunate *occurrence at*, 693
Toronto, a medical institute for, 1760; a Methodist hospital for, 1761
Torphichen, Priory of the Knights Hospitallers at, 1433
Torquay, health of, 760; Hospital, 883; masonic lodges' concerts and Torbay Hospital, 1279; children's ward of the hospital, 1619
Touche, Mr. Edmund D. la, 1163
Tourette, Dr. Gilles de la, death of, 1692
Tourist season in Egypt, 901
[illegible] enerating? 1159
[illegible] Hygiene in, Con-
[illegible]
Toxic amblyopia caused by methyl alcohol, 383
Toxins and antitoxins, 1620
Trachea, coal in the, in an infant, 155
[illegible] n at Cambridge, 825
[illegible] Parsons), 1213
[illegible] 824
Traill, Dr. Anthony, appointment of, to the Provostship of Trinity College, Dublin, 900
Train, a sanitary infirmary, for the Russian wounded soldiers, 751 (see also Services)
Trained Nurses Annuity Fund, 1169
Training of the feeble-minded (Dr. Francis Warner), 864
Training school for district midwives, proposed, 837
Trains, East end Underground, overcrowding on, 480
"Tramp factories," 1311
Tramps, spread of small-pox by, 446, 1215, 1384 (see also Vagrancy)
Tramway (electric) accident at Dudley, 337; at Wolverhampton, 613
Transplantation cyst tumour (Dr. Neville), 726
Transplantation of tendon for musculo-spiral paralysis (Mr. H. M. W. Gray), 1419
Transposition of the viscera (Dr. William Hartland), 1017; (Dr. Edward Liddon), 1197
Transvaal, Chinese labour for the, and plague, 956, 1392, 1393; miners' phthisis in the, 1362
Traumatic hæmatorrhachis, 670
Traumatisms of the eye during labour, 246
Travaux de Chirurgie Anatomo-Clinique, Voies Urinaires, Estomac (M. Henri Hartmann) (review), 661
Travel ticket, a circular, for London students, 770
Tredegar health report, 760
"Treherbert and District Medical Attendance Society," 1020
Treloar, Sir W. P., "Bart's," its past, present, and future, 1224
Trendelenburg position, dangers of the, 740
Trevelyan, Mr., miners' phthisis in the Transvaal, 1362
Treves, Sir Frederick, Bart., K.C.V.O., C.B., A Manual of Operative Surgery (review), 661
Trevithick, Dr. Edgar G., continuous clinical temperature charts, 684
Tri-bromides, "tabloid" of, 373
Trichiasis and the operation for its relief, 1355
Trick, what is the? 1249, 1320
Triennial prize of the R.C.S. Eng., 1146
Trimmer, Mr. R. J. A., obituary, 1826
Trinity College, Dublin, provostship of, 401, 901, 1160; degree in dentistry, 690; chair of botany, 1160; pass-lists, 62, 343, 476, 547, 1391, 1542, 1762
Triple-wick candle (Sir W. R. Gowers), 586
Tropho neurosis of the uterus (Dr. James Oliver), 1820
Tropical diseases, meeting of the West India [illegible]
[illegible] Cambridge
[illegible] iners, 622;
[illegible] Liverpool, 707
Tropical Medicine, the Liverpool School of, annual report of, 834
"Tropical" grate, 529, 530
Tropics, Food for the (Mr. T. M. Macknight) (review), 811
Trumper, Mr. W. A., *disinfecting pipe*, 1831
Trusses, inguinal (Mr. W. McAdam Eccles), 658

Trypanosoma in birds in India, 33; in man, 149
Trypanosoma Gambiense and the trypanosomes of Uganda and Congo Free State sleeping sickness, 1337
Trypanosomes and sleeping sickness in Uganda, 543, 1337
Trypanosomiasis, researches on an appeal for funds to continue the, on behalf of the Liverpool School of Tropical Medicine, 1737, 1622
Trypanosomiasis, human, the pathological *agent of*, 1240
Tubal abortion or rupture, intraperitoneal hæmorrhage and hæmatocele arising from (Dr. G. Balfour Marshall), 675; (Dr. D. Berry Hart), 1725
Tubal gestation, two cases of, 297; two specimens of, unruptured, 833
Tubal pregnancy, unruptured (Mrs. Scharlieb, M.D.), 435; rupture of a (Dr. W. Duncan), 563, 581
Tubby, Mr. A. H., sarcoma, 438; congenital dislocation of vertebra, 438
Tubercle bacillus, infectivity of the, 823; and alcohol, 1002; *method of infection of the* human body by the, 1209
Tuberculin, Beraneck's, 160; Koch's new, in the treatment of urinary tuberculosis, 935
Tuberculosis, of the tonsils in children, 89; and milk, 107, 547; treatment of, by Beraneck's tuberculin, 160; preventive measures against, the relation of the medical practitioner to, 282; prevention of, 617, 1465; of the choroid, 368; in dairy cows, 455; bovine, 839, 1580; in animals, *1169, 1828*; of the thyroid gland, 509; [illegible] ss on, 522; [illegible] in prisons, [illegible] branch, 1465; relation of human to bovine [illegible]
T[illegible] notifi- [illegible] of, 278, [illegible] n, 689; [illegible] ildren, [illegible] relations of, to other diseases, 924; death from, with chronic neurosis, 1039; value of the x rays in the diagnosis of, 1426
Tuberculosis (see also Consumption, Phthisis, Sanatorium)
Tuberculous affections of the face, 304
Tuberculous arthritis, treatment of, 474; in the young, 1355
Tuberculous deposit in the spinal cord in the course of pulmonary tuberculosis, 1071
Tuberculous disease, garlic for, 90, 481
Tuberculous glands, value of, ichthyol in, 296
Tuberculous meningitis, 295, 673, 1669
Tuberculous nodule in the ponto-medullary tract, 1356
Tuberculous patients, a sanatorium for, opposition to, 546; isolation of, at Paris, 1085; number of, in Paris hospitals, 1161
Tuberculous sputa, the destruction of, 466
Tuberculous ulceration of the mouth and of the pharynx treated with radium rays (Mr. Colin Campbell), 872
[illegible] plague, a [illegible] obituary, [illegible]
Tuffier, M., tooth plate in the œsophagus, 1824; collection of urine, 1824
Tuke, Sir John Batty, criminal responsibility, and mental disorder, 739; amendment of the Lunacy Acts, 1438, 1469
Tumour, cystic, of the uterus, 581
Tumour in the roof of the neck, 1125
Tumour of the pituitary body, symptoms of, 453
Tumour, ovarian, "fibroid" removed by posterior colpotomy, 365
Tumour, transplantation cyst, 727
Tumour, teratoid, of the ovary, 727
Tumour, vaginal, during pregnancy, removal of, 25
Tumours, cerebral, the surgery of, 379
Tumours, large uterine and ovarian, 891
Tumours, malignant and benign, differential [illegible]
Tumours, various, 997
[illegible] leprosy," 695
Turner, Dr. William Aldren, mental condition [illegible]
Tweedy, Mr. John, ambulance service for London, 1302
[illegible]
Tympanic plate, development of the, 1725
[illegible]
[illegible] fever and diphtheria, manual treatment in, 333; epidemics of, at Minnesota University, 763
Typhoid fever and water-cress, 54; and oysters, 1158
Typhoid perforation, successful operation for, 160; early diagnosis of, 1071
Typhus fever in Ireland, 401; in Montreal, 902; in Paris (false reports of), 963; in Victoria, 1088
Tyson, Dr. W. J., prevention and early treatment of disease, 1203

U

Uganda, sleeping sickness in 543, 1337
Ulcer, gastric, 91, 288, 370, 579, 1125, 1418, 1490, 1641, 1789
Ulcer, perforated gastric and duodenal, 579, 1425
Ulcer, rodent, treated by radium (Dr. A. Stanley Green), 791
Ulceration of the rectum (Dr. H. J. Cotton), 1056
Ulceration, tuberculous, treated with radium rays, 872
Ulcerative colitis, five cases of (Dr. W. Murrell), 721
Ulcerative colitis and an operation to control extensive hæmorrhage (Mr. H. Betham Robinson), 1118
[illegible]
Underground Railway, atmosphere of the, 966
Underground railways, the air of, in its relation to disease, 738
[illegible]
University, American, a bogus, 969
University candidates for the army, 185
University College, professor of hygiene at, appointment of, 384; *Sir Donald Currie's* gift to, 830; and the Institute of Medical Sciences, 1460
University Correspondence College, Calendar of (review), 811
[illegible]
University of Wales and a medical degree, 1442, 1465, 1519
Unpleasantly energetic, 842
Unqualified practice, by dentists, 180, 814, 1147; by a ticket-of-leave man, 180
Upward, Mr. Allen, Sayings of K'ung the [illegible]
[illegible]
Urinary tuberculosis, early (Mr. E. Hurry [illegible]
[illegible] Mr. A. H. [illegible] sting (Dr. [illegible] t Kilner), 921
Urine and the blood, comparative examination of the (Dr. A. E. Wright), 1123
[illegible] n aid to [illegible] in the, [illegible]
Urine, phosphates and urea of, 124
Urine, Physiology and Pathology of the (Dr. J. Dixon Mann) (review), 1797
Urine, suppression of, from impacted calculi, 439
[illegible] M. [illegible] me, 969
Uterine (see also Intra-uterine and Extra-uterine)
Uterine and ovarian tumours, large, 891
Uterine complications, malignant, of fibromyomata, 1428
[illegible] part of, shortly after delivery (*Mr. John D. Malcolm*), 933
[illegible] erations [illegible] Cervix, Intra- [illegible], 227; fibro- [illegible] tumour of, [illegible] pregnancy, [illegible] ds of [illegible] 1057; [illegible] glass [illegible] the, [illegible] (re- [illegible]

V

Vacancies, lists of, 65, 134, 203, 268, 344, 406, 479 550, 625, 694, 769, 840, 905, 968, 1025, 1092, 1170, 1249, 1319, 1394, 1473, 1544, 1620, 1696, 1764, 1830
Vaccination: expenditure at Barnstaple, 133; at Helston and at Wormley, 201; at Bath, 262; at Penzance, 924; triple compulsory, in France, 194 398; and the training of militia recruits, 331; in the Madras Presidency, 467; a case at Balderton, 623; Act of 1898, [illegible] ongst [illegible]; Mr. [illegible] remp- [illegible] 967; [illegible] officers, and antivaccinationist guardians, [illegible]

Vagina and uterus, discovery of two canals in the (in the year 1826), 1527
Vaginal douche, 66, 136
Vaginal tumour, successful removal of, during pregnancy, 25
Vaginal tumours, with Special Reference to Cancer and Sarcoma (Mr. W. Roger Williams) (review), 998
Vagrancy and labour colonies, 339; and the spread of small-pox, 1215
Vagrancy in Gloucestershire, 261, 1084; in Monmouthshire, 961; in Glamorganshire, 1020; in Somersetshire, 1084
Vagrancy, the question of, 668, 690
Vagus nerve, motor functions of the, 1613
Valerianate of zinc, 373
Valvular disease, prevention in (Dr. R. Caton), 1769
Van Praagh, Dr. Harold J., 224
Vanderbilt clinic of New York, 1737
Varicella (see also Chicken-pox)
Varicella, lymphadenitis in, 888
Variolous eruption, iodide rash resembling, 421
Varus of the foot, 951, 958
Vayno [illegible], 1312
Veins [illegible]
Vena [illegible] pericardial portion of, a case of spontaneous perforation of (Mr. I. McW. Bourke), 723
Venereal patients in the Berlin hospitals, 617
Venom, cobra, the precipitin of (Capt. George Lamb, I.M.S.), 916
Venoms, snake, the action of, on the nervous system (Capt. G. Lamb, I.M.S., and Dr. W. K. Hunter), 20; (Maj. R. H. Elliot), 715
Venous circulation, inspiration the principal agent in, 1590
Ventilation, and walls, 174; of factories and workshops, 176; of railway tunnels, 592; of schools, 1073; and the House of Commons, 1294; and Sir Michael Foster, 1317
Verchoyansk district (an immense tract of land without medical men), 1026
Veresaeff, Confessions of a Physician (review), 1436
Vermiform appendix adherent in a hernial sac, 296; and leading to a hydrocele, 432
Vernon Harcourt inhaler (Dr. Dudley W. Buxton), 805
Veronal, poisoning by, 223, 696, 1616; What is veronal? 335; "tabloids" of, 1360
Vertebra, fifth cervical, congenital dislocation of, 438
Vertigo, paroxysmal labyrinthine, alleviated by seton (Dr. T. W. Parry), 649; aural (Mr. R. Lake), 1567; due to labyrinthine caries (Mr. A. E. Cumberbatch and Mr. C. E. West), 1570
Vesical calculi, operations for the removal of (Mr. F. A. Southam), 1209
[illegible]
[illegible] in, at the Uni- [illegible]
Veterinary work, acute infective necrosis in, 1486
Viavi treatment, 482, 552
Vibratory Stimulation, Mechanical (review), 1286
Victoria (Australia), board of health of, and codes of duties for officers of health, 618; tuberculosis in, 764; annual meeting of the Medical Society, 765; typhoid fever, 1088
Victoria Cross, the surgeons who have won, 101; to be conferred on Lt. C. L. Smith, 1683
Victoria Hospital for Children, Chelsea, an appeal on behalf of, 884, 948; bazaar in aid of, 1787
Victoria, Regina et Imperatrix, a Hymn Dramatic of Life and Death (Mr. G. B. Barraclough) (review), 443
Victorian Sanatorium for Consumptives, 1088, 1825

VIENNA, CORRESPONDENCE FROM.—Sodium sulphocyanide in the treatment of syphilitic headache, 199—A peculiar skin disease in butchers, 199—Reflex effects on the pulse, 199—Abscess of the lungs, 403—Treatment of sarcoma with the Roentgen rays, 403—Treatment of carcinoma of the œsophagus by means of radium rays, 403—Death of Prof. Seeger, 403—Serum treatment of puerperal fever, 1759—Skin eruptions consecutive to the use of theocin (theophyllin), 1759—Adrenalin in the treatment of hæmorrhages, 1760

Village schools for the education of town children, 290
Villemin, M., tuberculous arthritis, 474
Vincent, Dr. R. H., Nutrition of the Infant (review), 808
"Vincent's angina" with destruction of the soft palate, 659
Viscera, transposition of, a case of (Dr. G. E. C. Pritchard), 438; a remarkable case of, in a sailor (Dr. W. Hartland), 1017
Viscera, weights and correlations of the, 1143
Visceral disease, the site of referred pain in, from an embryological standpoint (Dr. W. M. Willoughby), 1048, 1218
Vision, neurology of (Mr. J. Herbert Parsons), 1029, 1102; relation of "n" rays to, 594; of myopes, 1235
Visiting physicians at Poor-law institutions, 965
Vital statistics, weekly, English towns, Scotch towns, and Dublin, 48, 120, 182, 249, 329, 390, 458, 537, 606, 678, 748, 828, 893, 956, 1014, 1079, 1148, 1231, 1303, 1375, 1457, 1528, 1608, 1682, 1745, 1817; monthly, of London, 183, 459, 829 1232, 1529, 1746; of London during 1903, 748; of England and Wales, during 1903, 329, 1514
Vital statistics of Ontario, 617; of St. Petersburg, 1543; of Buenos Ayres, 1738
"Vitofer" preparations, 1360
Vivisection (see also Antivivisection)
Vivisection, the Dean of Worcester on, 759, 1018; questions in Parliament regarding, 937, 1170, 1471; and milk supply, 1145; returns of, 1393; and the Metropolitan Asylums Board, 1393; experiments before classes of students, 1544
Voies, Urinaires, Estomac (M. Henri Hartman) (review) 661
Volkovitch, Andrew Nikolævitch, the late, 1149
Volunteer Ambulance School of Instruction, 1234, 1469
Volunteer force in India, 1153
Volvulus of the small intestine (Mr. R. C. Dun), 1207

W

Waggett, Rev. Father P. N., Religion and Science (review), 1574
Wainewright, Dr. R. S., abscess of the frontal sinus, 1637, 1750
Wakley, Thomas, and Richard Cobden, 1697
Waldo, Dr. F. J., medical jurisprudence, 267, 343, 405, 476, 548, 622

WALES AND WESTERN COUNTIES NOTES.—Cardiff small pox hospital, 127—Housing in the Rhondda valleys, 127—Remuneration of colliery surgeons, 127—Cleanliness of milk-supplies, 127—Hospital Sunday at Plymouth, 127—Poor-law administration in Pontypool, 196—By-laws under the Employment of Children Act, 196—Bristol Workhouse Infirmary, 196, 689—Low death-rates in the West of England, 197—Salary of a medical officer of health, 261—New name for workhouses, 261—Death of Mr. E. C. Garland, M.R.C.S. Eng., 261—The Midwives Act in Gloucestershire, 261; in Cardiff, 338, 899; in Glamorgan, 690, 1756—Retirement of Dr. James Milward, 261—Bacteriological diagnosis in Gloucestershire, 261—Vagrancy, 261, 339, 690, 961, 1020, 1084, 1384—Vaccination expenditure, 262—Medical Acts Amendment Bill, 339—Instruction to a bearer corps in infirmary wards, 339—Vagrancy and labour colonies in Glamorganshire, 339, 1020; in Somersetshire, 690, 1086—University College, Bristol, 339, 1021—Cardiff Medical Society, 400—Swansea Workhouse Infirmary, 400—Colliery work as a board school subject, 400—Death of Mr. Jenkin Jenkins L.R.C.P. Edin., 400—High death-rate in Merthyr, 400—Royal United Hospital, Bath, 400 — Bristol medical dramatic club, 400—Insanitary elementary schools, 472—Victoria Hospital, Frome, 472—West Wales Sanatorium, 472—Death in a bath, 472 — Newport and Monmouthshire Hospital, 472 — Discovery of Neolithic human remains, 473, 1616—Infectious diseases and dockyard employés, 473—Cardiff Infirmary, 543—Wells Cottage Hospital, 543—Action for damages against a surgeon, 543—Death of Mr. E. S. Warburton, M.R.C.S. Eng., &c., 544—Bristol Eye Hospital, 544—Taunton and Somerset Hospital, 544—Prevention of infectious disease in Bath, 614 — Bristol public baths, 614—Royal Devon and Exeter Hospital, 615—University College, Bristol, 615—Barry health report, 689—Merthyr General Hospital, 690—Small-pox in Cardiff 760, 1537; in Bristol, 1084; in Swansea, 1239; and tramps, 1384—Death of Mr. Denis Nyhan, L.R.C.P. & S. Edin, &c., 760—Tredegar health report, 760—The recent county council election, 760—Health of Torquay, 760—Medical inspection of schools in Bristol, 900—Cheltenham General Hospital, 900—The late curator of Dorset County Museum, 900—Health report of the sanitary authority of the Port of Cardiff, 961—New workhouse at Newport, 961—Vagrancy in Monmouthshire, 961—Keynsham rural district health report, 961—"The Treherbert and District Medical Attendance Society," 1020—Prevention of small-pox, Bristol Methods v. Leicester Methods, 1020—Cruelty to a cow, 1020—Assaults upon children, 1021—Vagrancy in Gloucestershire and Somersetshire, 1084—Penybont health report, 1084—Cornwall County Nursing Association, 1084—Meeting of the Sanitary Institute at Cardiff, 1238—Dangers of celluloid collars, 1239—Fixity of tenure for medical officers of health, 1239—Bristol Royal Hospital for Women and Children, 1239—Notification of phthisis, 1239—Vaynor and Penderyn health report, 1312—Llandaff and Dinas Powis health report, 1312—Carmarthen Asylum, 1312 — Talgarth Asylum, 1312 — Swansea General Hospital, 1312—Memorial to the late Mr. W. M. Barclay, 1312—Bristol Royal Infirmary, 1312 — Poor-law conference at Malvern, 1384 — Disinfection after death from phthisis, [illegible] st a quack company [illegible] Water Hospital, Bath, [illegible] 1385—Vaccination Acts, 1385—Bridgend Workhouse, 1464 — Proposed reduction of the salary of a medical officer of health, 1464—Cardiff Seamen's Hospital, 1464 — Medical and surgical degrees for the University of Wales, 1465—Prevention of tuberculosis, 1465—Sanitary inspectors in rural districts, 1539—Failure of proceedings against a butcher, 1539—Winsley Sanatorium, 1539—Scarlet fever isolation in Cardiff, 1539 — "Westrumite" in Swansea, 1539—Diphtheria in Bristol, 1539—Memorial to the late Mr. Joseph Harper of Barnstaple, 1539—Newport waterworks, 1616—Exclusion of infants from public elementary schools, 1616—Milk epidemic of scarlet fever at Gloucester, 1616—Rhymney Cottage Hospital, 1616—Poisoning by veronal, 1616—British Medical Association, South Wales and Monmouthshire Branch, 1756—Swansea Provident Dispensary, 1756—Cardiff Infirmary, 1756—Ankylostomiasis, 1756 — British lake village at Glastonbury, 1756 — The late Alderman Joseph May, 1756

Wales (see England and Wales; Welsh; New South Wales)
Wales, University of, and a medical degree, 1442, 1465, 1519
Walford, Dr. E., Midwives Act in Cardiff, 338; health report of Cardiff, 961, 1078; school hygiene in its relation to education authorities, 1219
Walker, Dr. E. W. Ainley, Pathology of Inflammation, Infection, and Fever (review), 1662
Walker, Mr. C. E., cytology of malignant growths, 188, 251, 1502
Walker, Mr. J. W. Thomson, prostate and prostatectomy, 869; tubercle of the kidney and bladder treated by inoculation, 935
Walker, Mr. P. F., foundation of a studentship by, in pathology in Oxford University, 456
Wallace, Dr. J. Sim, irregularities of the teeth, 1061
Wallace, Mr. C. S., tetanus treated by antitoxin injected into the spinal theca, 642; normal and enlarged prostate, 869; attempt to divide the eighth nerve within the skull for the relief of tinnitus, 936, 1192
Wallace, Mr. David, chronic intestinal obstruction, 725
Waller, Dr. A. D., Signs of Life from their Electrical Aspect (review), 1000
Wallis, Mr. F. C., intussusception, 1648
Walls and ventilation, 174
Walsh, Dr. D., remarkable resuscitations, 1152
Walsham, Dr. Hugh, muscle and nerve rays, 526, 610, 831
Walter, Mr. Walter Winter, obituary, 1089
Walters, Dr. F. Rufenacht, sanatorium treatment, 1202
Wanstead Infant Orphan Asylum, 1586, 1610, 1738
War in the Far East, 691, 751, 957, 1015, 1081, 1150, 1234, 1304, 1377, 1458, 1534, 1609, 1683, 1749, 1819
War medals for civil surgeons, 1683 (see also Medals)
War, philanthropy in, 1376
War, sick and wounded in, 623; disease in, 1149
War Office changes, 391, 538, 588, 943, 1082, 1234
War Office changes and the future of the Royal Army Medical Corps (Surg.-Col. F. H. Welch), 753, 1082
War Office and dental appointments, 1247
War, Wounds in (Surg.-Gen. W. F. Stevenson) (review), 1798

Warburg's tincture, good results from, in malarial fever, 579
[illegible] tic defi[illegible]te, 434; acute intestinal obstruction and hysteria, 800
Warb, Hon. David, hundredth birthday of, 675
Warm climates, food in, 739
Warmer, the Instra, 1093
Warner, Dr. Francis, training of the feeble-minded, 864
Warning concerning South Africa, 1610
Warren, Mr. Henry, Banks and their Cus[illegible]
[illegible] uel of, [illegible]
Water (see also Filter, Hot Water, Infiltra[illegible]
[illegible] (Prof. S. Winslow)
[illegible] produced [illegible]
Water, method of examining, for the bacillus [illegible]
[illegible]
Water gas, dangers of, 614, 1427 (see also Poisoning)
Water-supplies, lead poisoning and, 383
Water-supply and diarrhœa in the Chelmsford rural district, 747
[illegible] 1754
Waterlogging of the lung (Mr. C. Carter Braine), 439
Waterproof sheeting, pegamoid, 1320
Waters, mineral, 323, 953, 1371, 1524, 1675
Waterston, Dr. David, anatomy of the pelvic fascia, 1659
Watson, Dr. D. Chalmers, pathogenesis of deafness, 84; influence of a pure raw meat diet on the thyroid, 1205, 1352
Watson, Dr. J. K., examination of the urine, 99
Watson, Mr. C. Gordon, South African Civil Surgeons' fourth annual dinner, 1380
Watson, Mr. J. H., chronic polycythæmia with enlarged spleen, 802
Watt-Smyth, Mrs. A., Physical Deterioration (review), 1727
[illegible]
Webster, Patrick Trevor (appeal on behalf o[illegible] 396
Webster, Prof. J. Clarence, a Text-book [illegible] Obstetrics (review), 660
Weigall, Dr. R. E., gangrene of the kidne[illegible] 111
Weights and correlations of the viscera, 1143
Weights and Measures Bill, another (introduced by Mr. Bousfield), 1169 (see also Metric)
Welch, Surg.-Col. F. H. (retired), War Office changes and the R.A.M.C., 753
Welland, Lt. Joseph R., R.A.M.C., death of, 185; the fate of, 193, 1683; obituary, 342
Wells Cottage Hospital, 543
Wells, Mr. H. G., sociology, 1516
[illegible] nal [illegible] of, [illegible]
West India Committee, meeting of, on tropical diseases, 707, 826
West London Hospital case (inquest upon Mrs. Piercy), 1366
West London Hospital Post-graduate College, conversazione, 1011; annual dinner, 1523, 1553
West London Medico-Chirurgical Society, annual dinner of, 951, 1367; Cavendish lecture, 1674
West of England Eye Infirmary, Exeter, 1589, 1762
West Wales Sanatorium, 472
Westcott, Dr. W. Wynn, Extra Pharmacopœia (review), 1661
Westmorland Lock Hospital, Dublin, 1386
"Westrumite" in Swansea, 1539
Wet nurse, infection of a, by a syphilitic infant, 1824
What is the trick? (a matrimonial advertisement), 1249, 1320
Whatley, Mr. J. L., sulphonal poisoning, 1016
Whisky (see also Adulteration, Spirits, Spirit [illegible] blends, 549, [illegible] 671, 893, 904, [illegible] pathic [illegible] rovincial [illegible] ghteenth (review) [illegible] dintment, 970
White, Dr. W. C., insanity in the U.S.A., 525
White, Dr. W. Hale, acute intestinal obstruction, 791, 800; "Internal Secretion," 870
White, Mr. F. W., a new inch measure ("inch wheel"), 374
White, Mr. F. Faulder, suppurative otitis, 1459
White, Mr. Sinclair, exhibition of cases by, 1125
"White man's burden," 380
Whiteabbey, sanatorium for consumptives at, 263
Whitechapel, death rate in (Mr. J. Theodore Dodd), 895
Whitehead, Mr. A. L., cerebral abscess, 428, middle-ear suppuration, analysis of 69 cases of, 805
Whitfield, Dr. Arthur, alopecia areata, 651
[illegible] value of the, [illegible]
Wilbe, Dr. Haydock, perforated gastric ulcer, 1641
Wilder, Prof. William H., glaucoma, 740
Wilding, Mr. W. F. W., and Christian Science, 1025
Wilkinson, Dr. A. T., uræmia, 727
Wilkinson, Dr. John, Droitwich brine baths, 1010
Wilks, Sir Samuel, the health of, 524, 598, 673, 824
Will, Dr. J. Kennedy, spinal degeneration, 1504
Williams, Col. W. D. C., C.B., 741
Williams, [illegible] ment of [illegible] annual [illegible] Graduate [illegible] x rays in the diagnosis of pulmonary tuberculosis, 1426
Williams, Dr. Leonard L. B., some aspects of [illegible] new ethyl [illegible] ed: a pre[illegible] Tumours, with Special Reference to Cancer and Sarcoma (review), 993; arthritism and cancer, 1820
[illegible]
Williams, Mr. S. R., new bedside spittoon, 1434
Williamson, Dr. Herbert, the site of impregnation, 803
Williamson, Dr. O. K., morbus cordis in a child, 1126
[illegible] mellitus, 213; [illegible] and Ferns [illegible] k (review), [illegible] ferred pain in visceral disease from an embryological standpoint, 1048, 1218
Wills, Dr. W. A., elasticity of the aorta, 1571
Wilson, Dr. A. Christy, treatment of tuberculosis by Beraneck's tuberculin, 160; pylorectomy and gastro-jejunostomy, 160; rupture of the intestine, 873
Wilson, Dr. J. T., and brandy in Scotland, 593
[illegible] sites, [illegible] logy [illegible] orts, [illegible] also [illegible] 1247, 1473 [illegible] antrum plug, [illegible]
Woking urban district, report of the medical officer of health of, 1078
Wolseley-Lewis, Dr. H., mental state in myxœdema, 1117
Wolstenholme, Mr., hospital isolation of scarlet fever, 893
[illegible] accident [illegible] in the [illegible] ishment [illegible]
Women and Girls, Ailments of (Florence Stacpoole) (review), 1359
Women, Diseases of (Dr. A. L. Galabin) (review), 808
[illegible]
Woods, Dr. J. Maxwell, chloride of ethyl inhaler, 1733
Woods, Dr. R. H., maxillary antrum containing a piece of indiarubber drainage-tube during eight years, 874
Worcester, Dean of, on vivisection, 759, 1018
Worcester and Warwick Volunteer Bearer Company, 1310
Worcestershire sanatorium, 476
Wording of the medical certificate of the cause of death, 327
Words spoken during operations, infection from, 235
Workhouse medical officers, the position of, 314
Workhouse nursing, the Central Midwives' Board and, 452
Workhouses, a new name for, 261; a new order relating to nursing in, 1247
Workhouses and infirmaries, children in, 624, 693, 1829
Working men, sanatoriums for, 1201, 1291, 1379
Workmen's *Compensation Act, 1897*, amendment of, 951; and the definition of an "accident," 1230
[illegible] the, 1080
Workshops (see also Factories and workshops)
[illegible] ion [illegible] the [illegible] on)
Wrestling, 450
Wright, Dr. A. E., inoculation in cases of [illegible] ethods [illegible] 657; [illegible] 799; [illegible] ad the urine, [illegible] urinary tuberculosis and tuberculin, 935; antityphoid inoculation, 514; treatment of disease by animal extracts and serums, 1127; exhibition of apparatus for measuring contents of human blood, 1456
Wright, Mr. G. A., pyloric obstruction, 1122
Wright, Whitaker, the death of, 319; the inquest on, 394, 466, 540, 609

Wynstone-Waters, E., wound of the left thorax, 1499
Wynter, Dr. W. Essex, simple expedients in physical therapeutics, 11

X

X rays (see Roentgen rays)

Y

Yates, Rev. S. A. Thompson, 39
Year-book, 1904, Public Schools (review), 1061
Yeast and extract of meat, 106, 133
Yeast tablets and powder, 1360
Yellow atrophy of the liver, acute (Mr. John Edwards and Mr. Maurice Hamblin Smith), 866
Yellow fever in Jamaica, 177; in the year 1826, 310; Dr. Carlos Finlay and the mosquito theory, 453; in the U.S.A. and Mexico, 691; prevention of 1314; debate on. at the Latin-American Medical Congress, 1382
Yeo, Dr. I. Burney, Therapeutics of Mineral Springs and Climate (review), 1358
Yeomanry, Imperial (see also Services)
Yeomanry (Imperial), hospitals' report, and Sir Alfred Fripp, 597, 605
Yeomanry masonic lodge, 1305
Yeovil Hospital, 1340; sewage works, 1469
Yoga and hypnotism, 524
Yoghourt (a preparation derived from milk), 546
Yonge, Dr. Eugene S., new method of demonstrating the laryngeal image and intralaryngeal operations, 1195
Young, feeding in relation to the health of the, 1216
Young, Mr. H. S. Schultess, 1094
Younger, Dr. E. G., Insanity in Everyday Life (review), 1359

Z

Zahnheilkunde, Lehrbuch und Atlas der (review), 307
Zanzibar, the Bishop of, a case of shoulder presentation ending by natural delivery, 1278
Ziehen, Prof., 607
Zinc, chloride of, urethral injections of, 770; in gonorrhœa, 1026
Zinc valerianate with iron and arsenic "tabloid," 1731
Zittel, Prof. Karl von, death of, 126
Zoological Record for 1902 (review), 1799
Zunz bequest, 133
Zürich, medical societies and medical defence in, 130; midwives' petition in, 1161

[*For List of Illustrations see next pages.*]

LIST OF ILLUSTRATIONS.

Four Drawings accompanying paper on Some Simple Expedients in Physical Therapeutics (Dr. W. Essex Wynter), 11, 12

Four Microphotographs of the Tympanic Bullæ and Vertical Sections of the Eustachian Tubes in Dogs, accompanying paper on Deafness and Middle ear Disease, 86, 87

Photoprint showing Abdominal Wall accompanying paper by Mr. E. Stanmore Bishop on Chronic Abdominal Surgical Disease, 142

Diagram showing Frequency of Granular Kidneys in proportion to Healthy Kidneys accompanying paper by Dr. Samuel West; 145

Picture of Dorsal Aspect of a Penis in a case of Hypospadias, 146; Vulva of a Human Fœtus in the Seventh Month, and Side View of the Penis and Scrotum of a child at Full Time, 147; illustrating a paper on Preputial or Odoriferous Glands of Man.

Diagram showing Marrow Cells, Phagocytes and several Isolated Bodies from the Marrow and Spleen accompanying paper on the Question of Trypanosoma Infection in Man, 149

Temperature Chart illustrating case of Lobar Pneumonia (Dr. J. M. Bennion), 151

Three Charts accompanying paper on Atmospheric Temperature and *Small-pox (Dr. David Shrewright)*, 152

Chart showing Influence of Salicylates and Aspirin, and also of a Rigid Diet, on the Sugar Excretion in Diabetes accompanying paper by Dr. R. T. Williamson, 215

Thirteen Figures of Pipettes described in paper on Certain New Methods of Blood Examination (Dr. A. E. Wright), 216, 217

Two Full length *Portraits of Male and Female Figures accompanying* paper on two cases of Osteitis Deformans in one family (Dr. Walter J. Kilner), 221

Four Photoprints illustrating paper on Hysterical Skin Symptoms and Eruptions (Dr. Thomas D. Savill), 275, 276

Drawings of Tylenchus Obtusus accompanying paper on Infection by Filaria Perstans (Dr. H. Charlton Bastian), 287

Diagram showing Scheme of the Systemic and Pulmonary Circulation, accompanying paper on Cardiac Failure by Dr. A. Morison, 294

Ground Floor Plan and Photoprint of Osborne House Convalescent Home for Officers of the Navy and the Army, 321, 322

Perimeter Chart accompanying paper on the Eye Symptoms of Rheumatoid Arthritis (Mr. W. M. Beaumont), 368

Six Illustrations of the Three Types of Characteristic Mitoses in Adenocarcinoma accompanying paper by Dr. E F. Bashford and Dr. J. A. Murray, 413

Three Photoprints of Sequestra and one Photoprint of Temporal Bone accompanying paper on the Etiology and Treatment of Suppuration of the Labyrinth (Dr. W. Milligan), 417, 418

Three Microphotographs *of Filaria Perstans and one Microphotograph* of Filaria Demarquaii accompanying paper by Dr. G. C. Low, 420, 421

Portrait *showing* Iodide Rash in a Syphilitic Patient Resembling a Variolous Eruption, 421

Drawing showing Horizontal Section through Cochlea, Tympanum, and External Ear of Rat about fourth week accompanying paper on Latent or Intermittent Nasal Obstruction (Mr. Mayo Collier), 430

Reproduced Specimens of Handwriting of Patient Before and After Treatment by Hypnosis, 492

Drawing of Section through Left Shoulder-joint, looking towards Hand showing Anatomy of Parts concerned in Subspinous Dislocation of the Shoulder (Dr. Arthur Keith), 496

Diagrammatic Representation of Triple Telescopic Intussusception originating in Meckel's Diverticulum, 506

Diagram and Photoprint illustrating New Apparatus for Maintaining Artificial Respiration, 515

Illustration of New Anaerobic Apparatus, 515

Photoprints and Diagrams of Four Open Domestic Grates, 529, 530, 532

Four Smoke Charts of Four Grates, 531

Plotted Results of Tests on Grates, 532

Diagrams of Smoke Scale showing Degrees of Blackness of Smoke emitted by Grates, 534

Drawings accompanying Hunterian Lectures on the Evolution and Action of Certain Muscular Structures of the Heart (Dr. Arthur Keith), 555 to 558, 629 to 632, 703 to 707

Two Drawings accompanying Paper on Rupture of a Tubal Pregnancy (Dr. W. Duncan), 564, 565

Two Complete 24 hour Continuous Clinical Temperature Charts, 585

Illustration of Uterine "Flag Mop," 586

Photoprint showing New Spectacle Frames for Ptosis, 586

Illustrations of the New Science Schools at Cambridge University, 59 to 603

Photoprint of the Sedgwick Statue at Cambridge, 604

Five Portraits of Patients accompanying Paper on Motor Symptoms of Mania and Melancholia (Dr. W H. B. Stoddart), 639, 640

Portrait of the late Sir Edward Henry Sieveking, M.D. Edin., F.R.C.P. Lond., 681

Four Diagrams accompanying paper on the Congenital Origin of Hernia (Mr R. Hamilton Russell), 708, 709

One Skiagram and One Photoprint accompanying paper on the Ambulatory Treatment of *Fractures of the Lower Extremity by* Hoefftcke's Modified Hessing's Splint Case Appliance (Mr. T. H. Openshaw), 711

Temperature Chart in a case of Metritis and Cellulitis in the *Puerperium treated with Antistreptococcic Serum (Dr. John W.* Duncan), 720

Multiple Stethoscope designed by Dr. W. G. Aitchison, 731

Improved Operation Table designed by Mr. J. Lionel *Stretton*, 731

[*List of Illustrations continued on next two pages.*

Wynstone-Waters, E., wound of the left thorax, 1499
Wynter, Dr. W. Essex, simple expedients in physical therapeutics, 11

X

X rays (see Roentgen rays)

Y

Yates, Rev. S. A. Thompson, 39
Year-book, 1904, Public Schools (review), 1061
Yeast and extract of meat, 106, 133
Yeast tablets and powder, 1360
Yellow atrophy of the liver, acute (Mr. John Edwards and Mr. Maurice Hamblin Smith), 866
Yellow fever in Jamaica, 177; in the year 1826, 310; Dr. Carlos Finlay and the mosquito theory, 453; in the U.S.A. and Mexico, 691; prevention of 1314; debate on, at the Latin-American Medical Congress, 1382
Yeo, Dr. I. Burney, Therapeutics of Mineral Springs and Climate (review), 1358
Yeomanry, Imperial (see also Services)
Yeomanry (Imperial), hospitals' report, and Sir Alfred Fripp, 597, 605
Yeomanry masonic lodge, 1305
Yeovil Hospital, 1340; sewage works, 1469
Yoga and hypnotism, 524
Yoghourt (a preparation derived from milk), 546
Yonge, Dr. Eugene S., new method of demonstrating the laryngeal image and intralaryngeal operations, 1195
Young, feeding in relation to the health of the, 1216
Young, Mr. H. S. Schultess, 1094
Younger, Dr. E. G., Insanity in Everyday Life (review), 1359

Z

Zahnheilkunde, Lehrbuch und Atlas der (review), 307
Zanzibar, the Bishop of, a case of shoulder presentation ending by natural delivery, 1278
Zieben, Prof., 607
Zinc, chloride of, urethral injections of, 770; in gonorrhœa, 1026
Zinc valerianate with iron and arsenic "tabloid," 1731
Zittel, Prof. Karl von, death of, 126
Zoological Record for 1902 (review), 1799
Zunz bequest, 133
Zürich, medical societies and medical defence in, 130; midwives' petition in, 1161

[*For List of Illustrations see next pages.*]

a Rest for Flexion of the Thighs after Abdominal described by Mr. A. Z. C. Cressy, 1064

panying paper on the Epidemiology of Enteric Fever in Hamburg (Dr. Reincke), 1107, 1110

ay Photographs accompanying paper on Three Cases al Reflex Pain (Dr. David Newman), 1112, 1113

llustrating a New Form of Removeable Deep Suture evention of Stitch Sinuses (Mr. Lawrie H. McGavin),

t-turbinal Snare described by Dr. Mackay MacDonald,

new Colour test Appliance described by Mr. Percy

new Sanatorium Chair described by Dr. D. Lloyd
4

Congress of Medicine and Hygiene at Buenos Ayres · of the Pabellon Argentino, 1154; Photograph of the Medicine where the medical portion of the Congress Two photographs of the San Roque Hospital (exterior ior), 1155; Photograph of the Buenos Ayres Isolation Diseases, 1156

Photoprint of a new Gastro-diaphane, described by Dr. George Herschell, 1361

Two Photoprints accompanying paper on Some Experiences in the Surgical Treatment of Suppurative Lesions of the Nasal Accessory Sinuses (Mr. Herbert Tilley), 1415, 1416

Two Illustrations of a new Bedside Spittoon, described by Mr. Sydney R. Williams, 1434

Portrait of the late Professor Wilhelm His, 1447

Two Portraits accompanying paper on Five Cases of Carcinoma of the Male Breast (Mr. C. R. Keyser), 1494

Portrait and Diagram illustrating a case of Congenital Deficiency of both Upper Limbs (Dr. H. Ashley Gaitskell), 1496

Portrait of a Sudanese illustrating a case of Gynæcomastia (Mr. Edwin S. Crispin), 1500

Illustration of the "Ondo" Soap Distributor, 1512

Portrait of the late Professor E. J. Marey, 1531

Sketch of Eastern Front of the proposed new Bellevue Hospital in York City, 1533

Two Photographs and two Skiagrams of Femora accompanying Le Professor Howard Marsh, on the Influence of Growt

LIST OF ILLUSTRATIONS—(*Continued*).

Photograph showing Fat Necrosis and Microphotograph of a Section from the Pancreas illustrating a case of Acute Hæmorrhagic Pancreatitis by Mr. E. T. Fison, 1560

Temperature Chart in a case of Pneumococcus Ulcerative Endocarditis by Dr. T. J. Horder and Dr. A. E. Garrod, 1562

Temperature Chart accompanying paper on 200 cases of Acute Lobar Pneumonia by Dr. John Hay, 1645; Two Tables showing Comparisons of the Results of Treatment, 1647

Two Maps of England and Wales, showing (1) the Incidence of Puerperal Fever during the years 1881-1900 and (2) Accidents of Childbirth during the same period, 1705; Two Maps of Glamorgan showing the same Features as regards the County, 1708 (Milroy Lectures on Deaths in Childbed by Dr. W. Williams)

Portrait of a Patient illustrating a case of Gastrostomy for Stricture of the Œsophagus (under the care of Mr. William Pooley), 1722

Illustration of a new Chloride of Ethyl Inhaler described by Dr. J. Maxwell Wood, 1733

Illustration of Sigmoidoscope Tube invented by Professor Strauss of Berlin, 1781; Two Views of growths as seen through the sigmoidoscope, 1782 (accompanying paper on the Diagnosis of Tumours in the Upper Rectum and Sigmoid Flexure by means of the Electric Sigmoidoscope by Mr. P. Lockhart Mummery)

Three Figures accompanying article on Strangulation of the Fully Descended Testicle from Torsion of a Pedunculated Mesorchium by Mr. G. H Edington, 1783, 1784

Two Diagrams accompanying paper on the Enumeration of Leucocytes by Dr. A. Ernest Jones, 1790, 1791

Three Photoprints accompanying account of a case of Traumatic Gangrene of the Scrotum with Plastic Operation for Formation of New Scrotum (Mr. A. Grainger Bisset), 1793, 1794

Illustration of a new Forceps for the Removal of Stitches described by Mr. E. Muirhead Little, 1800

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The Cavendish Lecture

ON

EXPERIMENTS ON THE IMMUNISATION AGAINST INFECTION OF OPERATION WOUNDS, ESPECIALLY OF THE PERITONEUM.

Delivered before the West London Medico-Chirurgical Society on June 24th, 1904,

BY JOHANN VON MIKULICZ-RADECKI,
M.D., LL.D.,
PROFESSOR OF SURGERY IN THE UNIVERSITY OF BRESLAU.

MR. PRESIDENT AND GENTLEMEN,—The successful treatment of infectious diseases to-day involves in many cases a combination of the two methods of treatment discovered, *the one by Edward Jenner and the other by Lord* Lister. Hygienic measures based upon Listerian principles keep the cause of infection at a distance, or at least make it harmless before it can come into contact with the human organism, whilst specific preventive inoculation has for its object the rendering of individuals more capable of resisting infection. Surgery has made but little use of the principle of preventive inoculation because the multitude of variety of pyogenic micro-organisms which may infect the wound adds greatly to the difficulty of finding a practical method of inoculating against them. Another reason why the question of immunisation *of wounds* has not advanced is that there is not so great practical necessity as in the case of general infectious diseases because the majority of wounds are efficiently guarded from infection by antiseptic treatment. There are, however, many operations and wounds in which the principle of antisepsis becomes useless because the a[illegible] to their physiological propert[illegible] tions, are invaded by pathog[illegible] of effectually disinfecting the mucous membrane of the stomach and intestines in preparation for operation has not yet been solved. We possess, it is true, a number of technical expedients for limiting the danger of infection but they do not succeed with certainty in preventing it in every case. The dangerous peritonitis in serious operations on the stomach and intestines is due to the fact that the bacilli f[illegible] eat a number to be tolerate[illegible] o say, the natural power [illegible] in the individual is not sufficient to overpower the mass of bacteria introduced. We can only diminish the danger of peritonitis at the present time by increasing the power of resistance of the peritoneum against intestinal bacteria. One means of effecting this is by producing an artificial [illegible] Loewy and Richter were [illegible] of albumoses, especially spermin. [illegible] thereby [illegible] pneumo[illegible] subcutaneous injection of albumose into rabbits made them proof against pneumococci and mouse septicæmia. After *each injection a hypoleucocytosis occurred first* and later a hyperleucocytosis. If the infection was brought about during hypoleucocytosis the animals without exception died. On the other hand, the course of the disease was influenced in the most favourable way when the infection was introduced after a hyperleucocytosis had occurred and was still increasing. [illegible] that during the stage of hy[illegible] men and dogs possessed a higher bactericidal value than normal blood. Hahn used yeast nuclein in his experiments on dogs and tuberculin in those on man. These experiments do not seem to have led to any practical result in the case of man. At any [illegible] septicæmia by [illegible] of nuclein by [illegible] of artificial hy[illegible] made itself evident—as, for example, in pneumonia—can be readily understood. The infected organism is at the time of the application of the remedy overpowered by the pathogenic microbes; all the engines of defence of the organism have already had to be led into the field. A still further increase through a later artificial hyperleucocytosis cannot be expected.

The question arises whether artificial hyperleucocytosis may not be of value in practice as a prophylactic. According to the above-mentioned experiments of Loewy and Richter, of Jakob and Hahn, one cannot exclude the possibility that by a partly anticipated mobilisation of great masses of leucocytes the latter may overcome the bacteria which have obtained entrance in the first instance in relatively small masses with greater ease than if the leucocytes delay their attack in force until the number and virulence of the bacteria in the tissues have markedly increased. Whether the observations of Jakob are applicable to the peritoneum had to be established by experiments on animals before they could be used upon man. Dr. Miyake of Japan, who recently worked in my clinic, undertook at my suggestion these experiments upon animals. These were carried out in the Breslau Hygienic Institute under the control of Professor Flugge. In this department of work we must note that we already had a predecessor named Salieri who in 1902 carried out experiments to increase the resistance of the peritoneum against bacillus coli infection. For this object he used small quantities of normal saline solution and found that *he could increase the natural resistance in guinea-pigs by* sevenfold to sixteenfold. The experiment was made three times on man in cases of laparotomy in which Salieri injected from 30 to 60 cubic centimetres of saline solution into the abdominal cavity. Salieri believed that he obtained favourable results, but in my opinion the operations *carried out by him do not definitely demonstrate* an increased resistance of the peritoneum. Salieri was led to undertake his investigation by the well-known experiments against cholera conducted by Issaeff in 1894. Issaeff produced in g[illegible] in the peritoneal transudate by [illegible] of normal saline solution, of [illegible] and of tuberculin. At the summit of this hyperleucocytosis he injected virulent cholera vibrios into the peritoneum and noted, according to the nature of the injected fluid, a more or less marked increase in the resistance of the peritoneum to the injected cholera bacilli. The most powerful reaction was obtained with nucleic acid. With an injection of one cubic centimetre of a 2 per cent. solution of nucleic acid the peritoneum was able to withstand from 13 to 17 lethal doses of cholera vibrios. Issaeff observed that the destruction of the microbes was carried out by the leucocytes of the peritoneal transudate. After only two hours the phagocytosis was evident. In the third hour free micro-organisms could no longer be found in the exudate and after five hours the process of destruction of microbes was completed. Just as Iss[illegible] ments we too selected th[illegible] of a satisfactory specific [illegible] the virus of peritonitis, as has been explained, are extremely small, nevertheless we ma[illegible] first, for in guinea-pigs the [illegible] able. The bacilli coli alone [illegible] peritoneum of the guinea-pi[illegible] peritonitis in man, especially [illegible] coccus pyogenes, are almost [illegible] *The experiments were carri*[illegible] a loopful to two loopfuls of a sterilised culture were injected into the peritoneum from a strain of bacillus coli. After a definite interval, which was different in different experiments, had elapsed the animals tolerated the introduction of five loopfuls of living, virulent culture and also the escape of the contents of the intestine into the abdominal cavity. The active immunisation with a strain of bacillus coli (derived from man) was thus, we may presume, able to protect against other bacillus coli strains that were accidentally present in the contents of the intestine. Nevertheless, it is possible to come across by chance strains in the case of which this does not occur. That in man we have to reckon not only with *different strains of bacilli coli but also with* different strains of streptococci and other pathogenic bacteria has been demonstrated above. On these grounds we did not make any further [illegible] immunisation ever [illegible] consisted exclusiv[illegible] resistance by hyperleucocytosis. In accordance with the procedure of Issaeff we tried the injection of various fluids into the peritoneal cavity; later, subcutaneous injections were also tried, for this form of application is better adapted to man than that of intraperitoneal injections. Sodium chloride solution (0·85 per cent.), neutral bouillon (2 per cent.), starch in physiological salt solution, and nucleic acid were used for injection. The first three solutions were only used intraperitoneally, nucleic acid subcutaneously as well. For intraperitoneal injection 2 per cent. of nucleic acid was used, for subcutaneous injection 5 per cent., neutralised nucleic acid solution one cubic centimetre of the solution was injected per 250·330 grammes body-weight. We found, in agreement with earlier experimenters, that the intraperitoneal injections of normal saline solution in the quantities above mentioned gave rise to a marked hyperleucocytosis in the peritoneal transudate. The maximum was reached after from 17 to 18 hours with an increase to about fourfold the normal leucocytosis. Still greater was the effect when the peritoneal cavity was washed out with 50 cubic centimetres of normal saline solution; in this case about two-thirds of the solution was left in the cavity. Maximum hyperleucocytosis occurred after 24 hours and resulted in five times the normal number of leucocytes. The reaction due to neutral bouillon was much less marked than that of normal saline solution. But a far more energetic action followed the 2 per cent. aleuronat mucilage. The maximum peritoneal hyperleucocytosis occurred in 30 hours and rose to between seven and eight times the normal number. A similar result followed the use of nucleic acid but the reaction was more speedy. The maximum was between seven and eight times the normal and occurred eight hours after the injection. Along with the local general leucocytosis in the blood took place but to nothing like the same extent. The maximum in one case was double the normal number of white cells. Subcutaneous injection also of 5 per cent. nucleic acid led to a hyperleucocytosis in the peritoneum as well as in the blood. The latter reached almost to the same height as with the injection in the peritoneum, the former remained far below. It reached approximately two and a half times the normal number. The important point is that here also, as in the experiments of Jakob, the injection caused a hypo-leucocytosis in all cases after half an hour to one and a half hours. With normal saline solution and with bouillon it was not considerable; with aleuronat and nuclein it fell even to one-tenth of its original amount in the peritoneal transudate. No general disturbance of any importance occurred. With the injection of normal saline solution the temperature was scarcely raised; with aleuronat and nucleic acid there was a rise of from 0·5° to 1·5° during the first hours after the injection.

After these experiments we used the injection with the above-mentioned fluids as a preliminary to an infection of the peritoneum and in the first instance a strain of bacterium coli was employed which we found to be very virulent for guinea-pigs. After it had been ascertained by 11 test experiments that the minimum lethal dose was a quarter of a loopful, the prepared animals were infected with the same strain. The infection of the peritoneum followed regularly seven hours after the preparatory treatment and therefore at a time when the hyperleucocytosis had not yet quite reached the maximum. The result was as follows. The effect of a single injection into the peritoneum of one cubic centimetre of normal saline solution was relatively weak, the power of resistance being only doubled (the infection after washing out the peritoneum with saline solution could not be employed because the bacillus coli strain at the time of the experiments in question had already lost its virulence). Much more energetic was the action of the intraperitoneal injec[illegible] ...e it increased the resistance of [illegible] Nucleic acid was still more [illegible] power of resistance of the peri[illegible] 16 to 20 fold. The subcutaneous [illegible] neutralised nucleic acid similarly [illegible]sistance of the peritoneum from 16 [illegible]eaker was the action of a 0·25 per [illegible] of repeated intraperitoneal injec[illegible]as considerably stronger. In this [illegible] the peritoneum could be raised to 40 [illegible] [illegible]dal action upon the bacterium [illegible] would have [illegible]y desirable to carry out the same series of experiments against the other bacteria that collaborate in the production of peritonitis in man and, above all, against the streptococcus and staphylococcus aureus and albus. Unfortunately, we found, in agreement with other people's observations, that the streptococci and staphylococci isolated from patients in our clinic were non-virulent for guinea-pigs. We therefore tried experiments upon rabbits but the same difficulty arose. It is not easy to find a strain of staphylococci which has a pathogenic effect on the peritoneum of the rabbit. We can definitely assume from the previously mentioned experiments of Kisskalt that in combating the staphylococcus pyogenes both leucocytosis and the destruction of the bacteria by the method of phagocytosis play at least as important a part as when the fight is between the organism and the bacterium coli. So far as the streptococcus is concerned the strains isolated from our clinic were insufficiently virulent for the peritoneum of the rabbit. One of the strains of the streptococcus given to us by Dr. Aronson of Berlin was, it is true, virulent for rabbits but to such a great extent that it acted as a specific bacterium of these animals. Against these highly virulent specific bacteria little effect is, as we already know, produced by a general increase of resistance by [illegible] these cases only a specific immunisati[illegible] infection. For these reasons the experiments could not be carried out in the way referred to. On the other hand, the experiments upon bacilli coli were supplemented in a most satisfactory manner by a series of observations which simulated the natural conditions occurring in peritonitis due to perforation. The experiments consisted in performing a laparotomy and forcing through an opening in the stomach or intestine as much of their contents as could be obtained from the immediate neighbourhood of the incision. Of five control animals which had not been previously prepared four died from peritonitis between five and 16 hours after the operation. The fifth became extremely ill but finally recovered but the amount of intestinal contents which was transferred to the peritoneum was less in this case than in the others. Ten animals were prepared. These recovered without exception. The preparation consisted in three intraperitoneal injections of nucleic acid, two injections of sterilised bacteria coli, three more injections of nucleic acid into the peritoneum, and two subcutaneous injections of neutralised nucleic acid. In each case laparotomy was performed seven hours after the injection. These experiments are such as to excite our interest in the highest degree, for by subcutaneous injections of nucleic acid it was possible to raise the resistance of the peritoneum to such an extent that even a considerable quantity of intestinal contents could be placed in the peritoneal cavity without causing damage, whilst without previous treatment an acute, rapidly fatal peritonitis followed almost without exception. This opens out a new field for the surgeon in preventing post-operative peritonitis. On three more animals a therapeutic experiment with neutralised 2 per cent. nucleic acid was tried. This solution was injected subcutaneously some time after the injection of the peritoneum with bacilli coli. It was found that when the infection had preceded the injection by six hours the peritoneum was able to stand only four times the lethal dose; whilst if the infection had taken place only one and a half hours before then the animal was able to withstand eight times the lethal dose. One animal which received 12 times the fatal dose along with the nucleic acid injection succumbed 19 hours after the infection. It therefore follows that subcutaneous injection of nucleic acid, if not used at too great an interval after the peritoneal infection, possesses a definite therapeutic value. This observation may perhaps be of value in acute cases of peritonitis from perforation.

Dr. Miyake has in three cases studied in detail the process of phagocytosis in the peritoneal exudate after the injection of bacillus coli. In two of these cases he employed preventive injections of nucleic acid into the peritoneum and in the third he used the drug subcutaneously. In all three cases an extremely active phagocytosis made itself evident half an hour after the infection. The number of microbes (in subcutaneous injection of nucleic acid) after half an hour was one-third, after one hour one-sixth, after three hours one-eighteenth, and after four hours one-hundred-and-eighth of the original number, whilst in the control animals the number of bacteria steadily increased. After 20 hours the exudate was sterile. The bacilli coli which still remained at the end of each interval of time proved on examination to be virulent in every case.

The action of the leucocyte could be very prettily watched in a microscopic preparation.

I felt justified after these promising experiments upon animals in beginning similar experiments, safeguarded by every precaution, upon man. The neutralised nucleic acid seemed to be the most suitable of the reagents which had been tried in the experiments upon animals. We first tried a ½ per cent. solution and gradually increased the strength up to 4 per cent. As a rule 50 cubic centimetres of the solution were injected subcutaneously. The injection was made under the skin of the chest in all cases with the exception of four; in these cases the upper part of the thigh was selected but owing to the inconvenient local pain this part of the body was not afterwards used. Intraperitoneal injection was tried in one case, and that the very first, but this method was entirely relinquished owing to its difficulty and the trouble it gave the patient. The 4 per cent. solution was injected twice. We altered this concentration because of the unpleasant general symptoms that were produced, for on both occasions it caused malaise and on one occasion sickness. There did not appear to be any reason, judging from the experiments on animals, for using so concentrated a solution. Thenceforth we always used the 2 per cent. solution, so that an adult man received about one gramme of nucleic acid to 75 kilogrammes of body weight, the same proportion approximately as we had tried in experiments upon animals. 58 cases in all were treated in this way between Jan. 7th and the middle of May. In 55 cases the operations were upon the stomach, intestine, or other abdominal viscera, and in three cases for extra-abdominal disease. In four cases the operations had, for some extraneous reasons, to be postponed, so that they did not take place until more than 34 hours after the injection was given. We have thus on four occasions had the opportunity of observing the effect of the injection by itself. This was the more welcome to us because we have learnt from investigations made by others that every operation, or even a simple anæsthesia, may give [illegible] therefore does not permit of [illegible] due to the injection of nucle[illegible] circumstance, and also our few clinical observations, enable us now to answer a number of questions on points about which we should like to have exact knowledge in reference to the working of this process in man. The following are the statements which I am now able to make. After the subcutaneous injection of neutralised nucleic acid we have constantly observed, not only in animals but also in man, a hyperleucocytosis in the blood which was almost always preceded during the first hour or so by a hypoleucocytosis. The question how high a degree of hyperleucocytosis was obtained through the injection is difficult to answer on the basis of our observations. To the earlier difficulties already referred to yet another must be added. Many of the patients showed a well-marked hyperleucocytosis even before the injection; for instance, in most cases of carcinoma of the stomach and in a few cases of cholelithiasis. It is clear that in these cases the relative increase of leucocytes cannot be so marked as in those cases where the number of leucocytes was normal. The highest value was 31,000 and the lowest 6100. Expressed in percentage with reference to the original number of leucocytes the increase of leucocytes in the blood varied from 9 to 452 per cent. In most cases we could not say whether the leucocytosis due to the injection of the nucleic acid had reached its maximum before the operation, for after the operation one could not with certainty assign a further rise to the nucleic acid. I am also convinced that where only a slight increase was observed this occurred after the operation and independently of it. We must admit this possibility because of the fact that, in the case of the four who were not operated upon during the first 34 hours, the maximum leucocytosis was on one occasion observed 24 hours after the injection. For the afore-mentioned reasons we are not in a position to make any definite statements as to the beginning of the most favourable phase of hyperleucocytosis because the operation was, in the great majority of cases, apparently performed before the commencement of this phase. Only in five cases was there a distinct [illegible] operation; in one of [illegible] fter the injection. [illegible] es from five to six [illegible], and in 12 cases from 13 to 19 hours after the injections. The experiments on guinea-pigs showed that the optimum for nucleic acid was reached seven hours after the injection. It seems to occur in man considerably later. We have therefore recently fixed the interval between preventive injection and operation at 12 hours. We believe that we thus, as a rule, follow out the instructions to operate on the rising tide of leucocytosis.

As regards the phenomena accompanying the injection of nucleic acid no serious local or general symptoms have as yet come under our observation. In the two cases in which a 4 per cent. solution had been injected the sensation of giddiness lasted but a short time. The most unpleasant factor for the patient is the local reaction. A tenderness and a slight swelling around the point of injection remain as a rule throughout the day. An intense erysipelas-like redness in two cases was seen, and it disappeared without leaving any trace after 24 hours. The only sign of reaction which appears with regularity is a slight increase in the temperature, which may be observed during the first few hours after injection (99° to 100°). In five cases the temperature remained below 98·6°, in 27 cases it rose to 100°, in six cases to 101°, in three cases to 102°, and in three cases above 102°. The rise in temperature was only in six cases accompanied by slight rigor, and even this was of short duration. The urine showed no pathological constituents after the injection and the patient's general condition was not in any other way impaired. Even the patients whose temperatures had risen suffered no discomfort thereby and maintained good appetites.

You will now ask me how far the immediate object of the injection of nucleic acid was attained, and how far the preparation of the cases had a favourable effect upon the course of the operation. The number of my experiments is not sufficient to permit me to form a definite judgment upon these points and to give an unguarded reply. We cannot in the case of man, as we do in that of the lower animals when introducing infective material into the abdominal cavity, give a certain multiple of the minimum lethal dose in order to see how far a preventive treatment has succeeded. We set all our apparatus in action, in spite of preventive inoculation, to reduce infection to the minimum. Since this method fortunately succeeds in the majority of cases, even without preventive inoculation, in guarding the patients from a fatal peritonitis a small number of satisfactory results do not prove much; but, on the other hand, one or two unsatistory results most certainly cannot condemn the method, for this method gives no absolute certainty like a specific immunisation but only increases the natural immunity and this may in certain circumstances, even when increased to thirty-fold, nevertheless be insufficient. I have, however, the impression that the cases hitherto treated have given more favourable results, not only in the number of cases that recovered but also in the progress of the individual cases, than the analogous cases of earlier date where the operation was performed without this preparation. In ten cases of resection of the stomach for carcinoma nine recovered, six of them without the slightest complication. The progress was marked by a smoothness that was quite exceptional before this treatment was adopted. Two cases which presented exceptional difficulty in the removal of the carcinoma did undoubtedly within 24 hours develop peritonitis with a pulse up to 160, which according to our usual experience foretold the most dismal prognosis. The patients fortunately survived this peritonitis. In the ninth case which recovered the progress was disturbed from the fourth day by broncho-pneumonia. The tenth case died; after seven days of uninterrupted progress he developed pneumonia to which he succumbed three weeks after the operation. Of the remaining operations I should like to refer first to 22 cases of gastro-enterostomy and entero-anastomosis, 12 of which were for carcinoma. Of these cases 19 recovered and three died. In all three cases death was most certainly not due to post-operative peritonitis, but in one case to perforation of an ulcerated carcinoma of the stomach two weeks after the operation, in another case to continued hæmorrhage from a carcinoma of the stomach 16 days after the operation, and in the third to peritonitis arising from a tuberculous granuloma in the intestine four weeks after operation. Of six cases of resection of the intestines at one operation four recovered and two died. In one case death occurred from collapse on the second day after a very prolonged operation of double resection for carcinoma; in the other case, where the injury was a bullet wound, death took place on the tenth day from hæmorrhage from the vena cava. In neither of the cases was there any peritonitis. One case of opening the stomach and stretching the cardiac orifice, performed on account of spasm, recovered. So also did six cases of operation on the bile-duct, seven other operations upon abdominal organs without opening the intestinal tract, and three extra-abdominal operations. The last to be mentioned are two cases of nephrectomy which were treated before the operation with nucleic acid. In both cases in order to remove the suppurating kidney the peritoneum had to be widely opened. One case recovered; the other died 12 days after the operation from hæmorrhage from the renal artery. In this case, too, there was no peritonitis. We therefore have 45 laparotomies in which the abdominal cavity was exposed to infection by the contents of the stomach or intestines or by some other infectious secretion. 38 of these cases recovered and in none of the seven fatal results was peritonitis the cause of death.

While relating my clinical experiences I have referred to nucleic acid only as a method of producing leucocytosis, but we have also used in most cases, and especially in severe operations upon the stomach and intestines, a second means which, according to experimental observations, is able to increase considerably the power of resistance of the peritoneum—I mean the intraperitoneal infusion of normal saline solution. Departing from my earlier practice I have used more and more during the last two years free irrigation of the peritoneal cavity with warm normal saline solution in all laparotomies in which the peritoneum runs some risk of infection.

The Milroy Lectures

ON

DEATHS IN CHILDBED: A PREVENTABLE MORTALITY.

Delivered before the Royal College of Physicians of London on Feb. 25th and March 1st and 3rd, 1904,

BY W. WILLIAMS, M.A., M.D., D.P.H. OXON.,

MEDICAL OFFICER OF HEALTH TO THE GLAMORGAN COUNTY COUNCIL.

LECTURE II.[1]

Delivered on March 1st.

THE ETIOLOGY OF PUERPERAL FEVER.

MR. PRESIDENT AND GENTLEMEN,—Puerperal fever has been common to lying-in women in all ages and climates and is described by Hippocrates 430 B.C., the first writer on the art of healing. Hippocrates, who contributed excellent clinical histories of the disease, did not only consider it as a dangerous disease but as a mortal one.

> "Morbus hic lethalis, et paucæ effugere possunt;
> Si mulieri pregnanti fiat in utero erysipelas, lethale est,"

and such were the views expressed by Celsus and Galen. Arabian physicians, such as Avicenna, as well as the physicians of the Middle Ages, have nothing more to say than that women in childbed sometimes took fever which led to their death. The medical writers of the sixteenth and seventeenth centuries go rather more into particulars. According to Hirsch it was Willis who first looked upon it as a disease which was different from other febrile processes, and he gave it the name of "febris puerperarum," and he went so far as to connect its origin with laceration of the uterus during labour and to refer it to a "miasma venenatum." By one writer the obstetric art was described as "only fit for fools and old women," and it was practised by them mostly until the establishment of a College of Physicians in London in 1518. In 1560 Thomas Raynold published his "Byrth of Mankinde." From the time of Thomas Raynold to that of Ströther, who wrote in 1716 and first termed it puerperal fever, many eminent men have written about puerperal fever, but their views differed but little from those of former writers. Thomas Cooper (1766) looked upon the disease as a truly dangerous and perplexing malady and considered that it proceeded generally from violent affections of the mind, such as grief, despondency, and the like.

With the exception of the statement that the disease was epidemic at Thasos in the time of Hippocrates the earliest epidemiological notice is one relating to the Hôtel Dieu of Paris in 1746, when it is said that of 20 patients who were seized with the disease scarcely one escaped. It is also pointed out that the hospital was crowded with patients at the time, an unusually large number of them being cases of wounds, and the ventilation of the wards was extremely defective and it is expressly stated that the lying-in department was directly over the wards occupied by the surgical cases. In 1830 Cruveilhier writes to the same effect on the epidemic of the Paris Maternité.

Hulme (1772) declared that the disease should be equally dreaded with the plague itself but did not consider it infectious. Denman (1788), according to Hirsch, was the first to allege that childbed fever was sometimes carried by medical men and midwives who had been in attendance on puerperal fever patients to other lying-in women.

In 1779-82 puerperal fever prevailed in an epidemic form at Aberdeen.[2] We are told in connexion with this epidemic that it prevailed principally among the lower classes of women but that women in the higher walks of life were not exempted; that it extended to the suburbs and contiguous country, where it proved as fatal as in the heart of the city. About 80 cases were attended by Gordon himself. To use his own words: "This disease seized such women only as were delivered or visited by a practitioner, or taken care of by a nurse, who had previously attended patients with the disease. In short, I had evident proof of its infectious nature and that the infection was as readily communicated as that of small-pox or measles and operated more speedily than any other infection with which I am acquainted." The infection was carried by a midwife to the country parishes of Nigg and Fintray and there also spread alarmingly.

The fever was epidemic in Leeds and its vicinity in 1809-12 and William Hey, jun., in his treatise on the epidemic tell us that it prevailed principally among the poorer classes of women but in the beginning it affected chiefly those in the higher stations of life and in its progress they were equally liable to its attacks. Its origin and spread could not be traced to any climatic conditions and it prevailed equally in both hot and cold weather. Dr. Hey writes: "It is somewhat remarkable that I have scarcely known an instance, in my own practice, of this disease coming on after præternatural delivery, or even a particularly hard labour. I do not mean to imply that such cases were more exempt from it than others, but so it has happened; and the fact shows that it was independent of anything untoward in the labour. It has, on the contrary, most frequently occurred, within the compass of my experience, after the most easy and most natural labour." This is entirely in accord with my own observations. I have known a medical man to go straight from a puerperal fever case to a confinement where the operation of turning was necessary. He introduced his hand into the uterus and the patient made a good recovery and was not infected with puerperal fever.

Armstrong (1813-14), in his description of the epidemic in Northumberland, Durham, &c., writes: "It is a singular fact that in whatever place the fever in question occurred it was principally limited to the practice of one accoucheur in the place." He further remarks: "This complaint, as it was presented to me, generally occurred about 24 to 30 hours after delivery. It did not seem to depend upon any difficulty of labour for in most of the women in whom it occurred parturition was remarkably easy. The first case at Sunderland occurred in January, 1813, and by the spring of the same year the disease had assumed formidable proportions." 43 cases occurred from Jan. 1st to Oct. 1st and of these 40 were treated by one medical man or his assistant, the remainder having been seen by three different accoucheurs. At Chester-le-Street, about nine miles from Sunderland, several cases occurred to a certain medical man, whilst a Mr. "N." of the same place only met with a solitary instance now and again. One accoucheur lost seven patients in a town not far from Newcastle-on-Tyne, and it is stated that the disease was confined to the patients of that practitioner and in the preceding year in like manner to those of one midwife in Newcastle itself. In May, 1813, the disease appeared at Alnwick and was confined to the practice of two medical men. Though one midwife who had a considerable increase of business had not a single case of the disease. another midwife, however, who had been about two days in the house of a lady dying from puerperal fever, went into a district about eight miles away and there delivered several women, nearly the whole of whom were attacked by puerperal fever. In this particular the epidemic strikingly corresponded with that of Dr. Gordon in Aberdeen; for he distinctly mentions that the disease occurred to certain individuals, whilst it was entirely unknown in the practice of others living in the same neighbourhood and he naturally attempted to account for this singular circumstance that the practitioner conveyed the contagion from patient to patient. The fever existed for more than two years in different parts of Durham and Northumberland. The epidemic really commenced in the neighbourhood of Stockton-on-Tees in 1811 and it spread to Newcastle-on-Tyne and Sunderland, afterwards to Chester-le-Street, and lastly in and about Alnwick. During its prevalence a great number of women died from the disease, but the number is not given and Dr. Armstrong says, "and this I was creditably informed, every patient perished who was not bled in the beginning."

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[1] Lecture I. was published in THE LANCET of June 18th (p. 1701) and 25th (p. 1772).

[2] Gordon's Essay on Puerperal Fever at Aberdeen.

Armstrong was of opinion that puerperal fever was different from "the weed," "after pains," and "hysterites." The symptoms are very well described by him: "Abdominal pain or soreness, anxious breathing, unusual frequency of pulse, increased temperature, anorexia, prostration of the vital and voluntary powers, with an unnatural condition of the excrements are among the chief of the pathognomonic signs of the puerperal fever." It is well known that unmarried women do not recover so well as married women, the mental irritation attendant upon their condition considerably increasing the febrile excitement and thus accompanying the danger. Armstrong dealing with prevention says: "When puerperal fever is epidemic the accoucheur should make it a point of duty to have the apartment of the woman whom he is engaged to attend properly cleaned and ventilated before confinement; to prevent nurses and other persons who have been in contact with those affected from waiting upon or going near any patient about to be delivered; to pay the most scrupulous regard to the cleanliness of his own person, using daily ablutions of the wi[illegible]" [illegible] years on 20[illegible] Hospital, London (Table XXIII.). He classifies puerperal fever into four groups, the fourth of which is most dangerous, and he observes: "When this fourth form of puerperal fever is prevalent and characteristic of the epidemic 1 in every 3 dies in the London hospitals under any treatment and if the complications be many this mortality will be still increased, and the most judicious and the most humane act is to shut up these receptacles forthwith." Such, indeed, was the experience of William Hunter who used to say of puerperal fever cases: "Treat them in what manner you will at least three out of every four will die." Such was the experience of those who witnessed its plague-like ravages in the continental hospitals and such was that of Ferguson who was of opinion that this form of puerperal fever existed in hospitals alone. Ferguson further observes: "I believe that the single chamber of the pauper is more wholesome than the spacious ward of the hospital patient; while in private practice, among the well-housed and well-nourished, the milder forms are the commonest." This was also the opinion shared by most others at that time.

It would be interesting to give other instances, such as those recorded by Storrs (1842) in connexion with the Doncaster epidemic; by Blackmore (1831) in reference to an epidemic at Plymouth; by Simpson (1851) in connexion with some fatal cases at Edinburgh; Litzmann (1841–42) in connexion with an epidemic at Halle; and by Martin (1856); Schulten (1859); Netten Radcliffe (1865) in connexion with the Crickhowell epidemic; and so on. All these point in the same direction and should serve to impress upon us that the question of personal responsibility cannot be too strongly urged upon midwives and medical men.

It was Semmelweiss (1846) who founded the doctrine of the septic nature of puerperal fever by observing the frequency with which it followed the exposure of puerperal women to cadaveric putrefaction. It was this observation of Semmelweiss and the analogies of puerperal and surgical fevers first pointed out by Simpson, together with the investigations of Pasteur, Davaine, Rindfleisch, Koch, and others on the part played by micro-organisms in disease that led up to Lord Lister's system of antiseptic surgery. According to Priestley[3] it was Stadfelt of Copenhagen (1865) [illegible] hod to puerperal uses in the [illegible] He used carbolic acid; but [illegible] corrosive sublimate as being a more efficacious germicide. Guided by the progress of antiseptic surgery a new departure was inaugurated in Germany and then commenced aseptic, as distinguished from antiseptic, midwifery. The antistreptococcic serum when further elaborated may become an important factor in the prevention as well as in the cure of puerperal fever.

I will now relate some of my experiences in connexion with epidemics of puerperal fever which I was fortunate enough to have the opportunity of investigating. I was appointed medical officer of health of Glamorgan in December, 1892, and arrived in time to investigate an epidemic of this malady which had been for some time raging in two adjoining valleys included in the Garw and Ogmore urban district and situated in the centre of our coalfields. The valleys in question run north and south and are typical Glamorgan mining valleys—long, crooked, deep, and narrow. Their higher parts are densely populated on both sides of the black and highly polluted streams that run through each of them. Most of the houses are newly built and 16 or 18 years ago there was only an occasional farmhouse to be seen. The ridges of mountains on either side rise to a height of from 800 to 1200 feet above the sea level. The population of the two valleys numbers some 14,000, consisting for the most part of colliers and their families, with some tradesmen and artisans to minister to their wants. The houses are built of good quarried stone and are dry and comfortable in the majority of cases. There

TABLE XXXV.—SHOWING THE INFECTIOUS SICKNESS AND MORTALITY IN THE GARW VALLEY FROM 1889 TO MARCH 1ST, 1893.

Year and locality.		Population census, 1881.	Population estimated.	Registered births.	Small-pox.	Scarlet fever.	Diphtheria.	Membranous croup.	Typhus.	Enteric or typhoid fever.	Relapsing.	Continued.	Puerperal.	Cholera.	Erysipelas.	Measles.	Whooping-cough.	Diarrhœa or dysentery.
1889	Ogmore Ward	6,893	—	—	0	80(19)	0	0	0	16(6)	0	0	4	0	0	0	30(5)	4(3)
	Garw Ward				0	180(28)	0	0	0	8	0	0	5(5)	0	0	84	20(3)	100
1890...	Ogmore Ward	6,893	12,500	548	0	12(2)	0	0	0	19(5)	0	0	8(3)	0	3	(8)*	(8)*	(4)*
	Garw Ward				0	175(14)	0	0	0	4	0	0	2	0	1(1)	(2)*	(3)*	(1)*
1891...	Ogmore Ward	13,080	13,080	605	0	27(2)	0	0	0	6	0	0	8	0	2	(1)*	(2)*	
	Garw Ward				0	32(2)	0	0	0	5(1)	0	0	6(2)	0	0	(14)*	(10)*	(2)*
1892...	Ogmore Ward	13,080	15,080	675	0	23(2)	0	0	0	36(8)	0	0	6(3)	0	2(1)	(1)*	(1)*	
	Garw Ward				0	41(5)	0	0	0	14(1)	0	0	10(5)	0	12(1)	—	—	(2)*
Jan. 1st, 1892, to March 1st, 1893 ...	Ogmore Ward	—	—	—	—	—	—	—	—	—	—	—	8(4)					
	Garw Ward	—	—	793	—	—	—	—	—	—	—	—	25(12)					

NOTE.—The number of deaths in each case is given in brackets. * No return of cases.

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[3] Transactions of the International Congress of Hygiene and Demography, 1891.

TABLE XXXVI.—*Giving Particulars of Cases of Puerperal Fever at Pontcymmer in the Garw Valley, from May, 1892, to March 1st, 1893.*

Initial of patient.	Date of confinement.	Primipara or multipara.	Midwife.	Duration of illness.	Results.	Remarks.
	1892.					
S.	May 14th.	M.	Mrs. P.	4 weeks.	R.	Fatal scarlet fever next door. House clean.
R.	,, 23rd.	P.	,,	4 weeks.	D.	—
L.	June 13th.	P.	,,	7 days.	D.	—
D.	,, 23rd.	P.	,,	9 days.	D.	Scarlet fever a few yards away.
R.	July 10th.	M.	,,	—	R.	—
E.	Sept. 17th.	P.	,,	—	R.	—
H.	Oct. 31st.	M.	Mrs. T.	9 days.	D.	Drainage defective.
W.	Nov. 7th.	?	Stranger.	4 weeks.	D.	—
D.	,, 29th.	?	Mrs. S.	—	R.	Drainage defective.
D.	Dec. 6th.	M.	Mrs. P. 2.	—	R.	,, ,,
J.	,, 7th.	M.	,,	—	R.	,, ,,
J.	,, 15th.	M.	Mrs. P.	—	R.	Scarlet fever in the house a short time previously.
R.	,, 23rd.	M.	Mrs. T.	7 days.	D.	Disease developed the second day. Erysipelas upon the baby and a man in the same house.
	1893.					
E.	Jan. 1st.	P.	Mrs. P.	—	R.	Overflowing closet in the basement.
Ll.	,, 7th.	M.	Mrs. T.	—	R.	Insanitary surroundings
D.	,, 20th.	M.	Mrs. P.	—	R.	—
—	March 3rd.	P.	Mrs. P.2.	3 days.	D.	Drainage defective.
S.	,, 3rd.	—	Mrs. R.	—	D.	Insanitary closet in the basement.

are but a few privies, most of the houses having been in recent years supplied with pans and syphons, and connected with the public sewers. The water-supply is good and plentiful. The incidents of the epidemic were briefly as follows.

Puerperal fever had been prevalent in this district for many years; it is said to have been endemic in the Garw Valley. The number of cases that were reported or came to the knowledge of the medical officer of health for the period 1889–March 1st, 1893, were in—

Year.	Number of cases.	Recovered.	Died.
1889	9	4	5
1890	10	7	3
1891	14	12	2
1892	16	8	8
1893 (Jan. 1st to March 1st)	18	10	8

so that during January and February, 1893, 18 cases occurred and eight proved fatal. In 1892 the number of cases was 16, with eight deaths; in 1891 14 cases with two deaths; in 1890, ten cases with three deaths; and in 1889, nine cases with five deaths; making, in four years and two months, 67 cases, with 41 recoveries and 26 deaths. From Jan. 1st, 1892, to March 1st, 1893, 34 cases occurred; of the 26 in the Garw Valley, 12 were fatal; and of the eight in the Ogmore Valley, four were fatal. During this period (14 months) there were 793 births registered, showing a death-rate of 20·1 per 1000 registered births as compared with a mean rate of 2·5 for England and Wales. Table XXXV. shows the number of other infectious diseases that occurred in the district from 1889 to March 1st, 1893.

Of the 18 cases at Pontcymmer (Table XXXVI.) seven were primiparæ and five of them were fatal. Nine were attended by the same midwife and of these three were fatal. In six instances the drains were defective; in two the surroundings were insanitary.

Of the 11 cases at Blaengarw six were primiparæ, of whom four died. Four cases were attended by one midwife and four by another. Of the six that proved fatal all were natural and easy labours, and three, at least, were in young women. (Table XXXVII.)

TABLE XXXVII.—GIVING PARTICULARS OF CASES OF PUERPERAL FEVER AT BLAENGARW, IN THE GARW VALLEY, FOR A PERIOD OF TWO YEARS.

Initial of patient.	Date of confinement.	Primipara or multipara.	Midwife.	Duration of illness.	Results.	Remarks.
	1891.					
D.	March 3rd.	M.	Mrs. Ll.	3 weeks	R.	Miner's wife. House clean. Natural labour. Second day rigor and temperature 102° F. Third day temperature 104°. Severe abdominal pain and tenderness. Temperature normal on the twelfth day. Mrs. Ll. also attended another case at the same place, which also made a good recovery. Medical man present at the birth of the child.
G.	,, 8th.	M.	Mrs. T.	8 days.	D.	Natural labour. Rigor third day. No abdominal tenderness. Lochia sweet. Death eighth day. Temperature 108° F. No source of infection could be traced. House clean.
J.	Nov. 21st.	M.	Mrs. T.	2 weeks.	D.	Wife of grocer. House clean. Natural labour. Rigor seventh day. Temperature varied from 102° to 104° F., but at last went up to 107° a little before death. Cause of death, peritonitis.
	1892.					
M.	May 28th.	P.	Mrs. Ll.	4 weeks.	R.	Instruments used. Severe post-partum hæmorrhage. Rigor third day; temperature 105° F. same evening. Slight abdominal pain and tenderness. Discharge foul.
J.	Nov. 16th.	P.	Mrs. T.	7 days	D.	Age 23 years. Easy labour. Rigor second night. Temperature 103° F., with abdominal tenderness and cessation of lochia None of the usual sources of infection could be traced.
B.	,, 17th.	P.	Attended by a medical man.	7 days.	D.	Aged 21 years. Easy labour. Rigor second night and temperature of 102·5° F.; great tenderness over uterus and foul lochia although she had been washed with antiseptic lotions. This case was peculiar for its terrible and persistent vomiting. Her father, who lived in the same house, was then suffering from a large wound of the leg. House clean.
M.	Dec. 20th.	M.	Mrs. T.	—	R.	Forceps delivery. Rigor and high temperature on the fourth day which yielded to usual treatment.
M.	,, 24th.	P.	Mrs. Ll.	7 days.	D.	Easy labour. Age 20 years. Fifth day rigor, high temperature (104° F.), tympanites, and abdominal tenderness. Lochia, although profuse, were very foul; green vomiting. Died on the seventh day; hyperpyrexia. The midwife in this case had attended a fatal case about a fortnight before this one, but in the interval had, so she said, thoroughly washed and boiled all her clothes at the wish of a medical man.
H.	,, 30th.	M.	Mrs. R.	14 days.	R.	Forceps delivery. Rigor and high temperature on the third day. Temperature normal on the fifth day.
D.	,, 31st.	P.	Mrs. Ll.	14 days.	D.	Miner's wife. Natural labour. Progressed favourably till Jan. 7th, when she sat up in bed to nurse the child. Rigor following morning, with a temperature of 102° F. Great swelling and abdominal tenderness. Temperature 102°. Jan. 14th, temperature 107°. Death took place from peritonitis. House very clean. Slight post-partum hæmorrhage.
	1893.					
W.	March 4th	P.	Her mother.	—	R.	Easy labour. Rigor and high temperature on the second day. History of erysipelas in the same house 12 months previously.

The Nantymoel cases (Table XXXVIII.).—D. was confined in a house where the whole family, six in number, had suffered from scarlet fever. The last was convalescent at the time of her confinement. On the second day symptoms of puerperal septicæmia were developed with a high temperature and foul discharge. The uterus was washed with a solution of perchloride of mercury and in a week the patient was convalescent and made a good recovery. About six weeks afterwards E. was delivered of twins. There was a severe rigor on the second day accompanied by a high temperature. In a few days symptoms of peritonitis developed and the patient died on the eighth day. She was attended by H. L.

TABLE XXXVIII.—*Giving Particulars of Cases at Nantymoel and Tynewydd (almost adjoining), in the Ogmore Valley.*

Initial of patient.	Date of confinement.	Primipara or multipara.	Midwife.	Duration of illness.	Results.	Remarks.
	1892.					
A.	June 6th.	—	Mrs. A. W.	—	R.	—
B.	,, 8th.	—	Mrs. H. L.	—	R.	—
C.	August 2nd.	—	Mrs. L.	—	D.	The midwife in this instance was suspended for three months but had since attended 30 cases without ill effects.
D.	Oct. 10th.	—	Mrs. H. L.	—	R.	—
E.	Nov. 10th.	—	,,	—	D.	—
F.	,, 13th.	—	,,	—	D.	Mrs. H. L. was stopped attending for six weeks, but she afterwards attended three cases without ill effects.
	1893.					
J.	Jan. 8th.	—	,,	—	D.	—
H.	,, 21st.	—	,,	—	D.	Mrs. H. L. was stopped attending for nine weeks but had since attended six cases without ill effects.
I.	,, 27th.	—	Mrs. A. W.	—	R.	—
K.	,, 27th.	—	,,	—	R.	—

Three days after the death of E., F. was confined in the same street and attended by the same midwife (H. L.). A rigor occurred on the second day with signs of peritonitis on the third. She rapidly got worse and died on the sixth day. During the interval between the first and second cases (above recorded) H. L. attended several cases without any signs of septicæmia. After the third case she was debarred from attending for six weeks. At the end of six weeks she attended another case. This patient was very ill three days before her confinement and died three days after delivery from violent peritonitis. Four days afterwards H. L. attended another woman who made a good recovery in due time. This same midwife went on attending confinements for three weeks without any ill effects until she attended H. This patient had a rigor on the second day, with a temperature of 101° F. On the morning of the third day the temperature was 102°, and by 4 o'clock of the same day the temperature was 107°. She became unconscious and died at 7 o'clock the same evening. After the above case the midwife was debarred attending up to March, 1893.

During the same period of about five months, A., I., and K. were attended by A. W., another local midwife. All these recovered. This midwife had attended many cases since and without any ill effects. During the same period, and indeed during the year, several cases of confinement occurred and were attended by three different midwives, where a slight rise of temperature was manifested, but they recovered. Influenza was prevalent at the time. It was a very common occurrence in this practice to have slight cases of the so-called puerperal fever, but generally they were easily controlled by antipyretics and disinfecting injections, or, in fact, without any treatment whatever.

The notable features of the Ogmore cases were that: (*a*) the fatal cases (at Nantymoel) were attended by the midwife H. L.; (*b*) all the cases attended by the midwife A. W. recovered; and (*c*) during the interval between the first and second fatal cases H. L. attended several cases without the slightest ill effects. The midwife A. W. did not cease attending cases for even a day, and, whilst H. L. was abstaining, A. W. probably attended a case daily on an average. Two of her cases were severe puerperal fever and both of the patients recovered.

The above statements show that puerperal fever has prevailed to an abnormal extent in this district for some years—that it was endemic and never entirely absent from the locality. I was informed by some of the oldest practitioners in the Garw Valley that cases of [illegible] there at intervals for 13 years [illegible] fever, *indigenous in some of the* [illegible] outline of the sanitary conditio[illegible] the district, and I would only add that the two valleys are totally distinct and separated by high hills of Penant sandstone and that there is no intercourse between the midwives of the one and those of the other. Notwithstanding this fact the disease *has been prevalent in* both valleys.

It is well known that defective sewerage and typhoid fever go hand-in-hand. This is clearly exemplified by the fact that Pontycymmer (in the Garw Valley) and Tynewydd (in the Ogmore Valley), the most insanitary spots throughout the district, suffer the most from typhoid fever. I should also mention that these localities are the most densely populated. It is possible, if not probable, that there might exist a close relationship between puerperal fever and of insanitary atmosphere, containing sewer gases, arising from untrapped and badly ventilated drains or sewers or from the soil which is often damp and boggy and impregnated with excrement and decomposing vegetable matter. Of this I cannot speak [illegible] .eved by some to have intimate [illegible] puerperal fever. Scarlet fever has been prevalent in these valleys for years, but the accompanying tables do not conclusively show the connexion, if any, that [illegible] I have notes of [illegible] ippened in house[illegible] and the experienc[illegible] (which coincides with my own) may be summarised thus: 1, That the majority of cases confined in houses infected with scarlet fever escape entirely. 2 That occasionally the mother takes scarlet fever but does not develop any puerperal symptoms such as rigors, high temperature, abdominal tenderness, fœtid lochia, &c., and generally recovers.

The following are noticeable facts also: 1. That not a single case of diphtheria had been reported to the medical officer of health during the last five years. Indeed, I am [illegible] known *in these valleys.* 2. [illegible] to be attacked than multi[illegible] ich primiparæ suffered there [illegible] t of 14 where multiparæ suffered there were only 4 fatal cases. 3. That the fever more readily attacks, and is more fatal in, cases of easy and natural labours. 4. *That the above statistics and history* of cases do not afford conclusive evidence of the relationship, if any, between this disease and other zymotic diseases, such as erysipelas, measles, whooping-cough, and diarrhœa. 5. That a number of cases attended by infected midwives escaped entirely. 6. That the infection in this disease is most subtle, persistent, and portable, and more difficult to get rid of than in almost any other disease, or probably appears to be so, owing to the susceptibility of the puerperal woman to such an infection. 7. That all the fatal cases in one locality were attended by one and the same midwife. 8. That midwife P. attended six cases within a space of four months and that three of these (primiparæ) terminated fatally.

I [illegible] ntioned that *nearly* all the confinements [illegible] the county are attended by [illegible] as they are called, whose [illegible] eptics, and infection is *nil.* I have interviewed a few of the above midwives who frankly admitted that they were *ignorant that, they might have been* the means whereby the disease was spread, and that up to a recent date the necessary precautions against the spread of the disease were not observed for the simple fact that they were ignorant of the danger connected therewith. Such a condition of affairs is not unique—viz., that midwives spread puerperal fever broadcast and are not interfered with. Even

TABLE XXXVI.—*Giving Particulars of Cases of Puerperal Fever at Pontcymmer in the Garw Valley, from May, 1892, to March 1st, 1893.*

Initial of patient.	Date of confinement.	Primipara or multipara.	Midwife.	Duration of illness.	Results.	Remarks.
	1892.					
S.	May 14th.	M.	Mrs. P.	4 weeks.	R.	Fatal scarlet fever next door. House clean.
R.	,, 23rd.	P.	,,	4 weeks.	D.	—
L.	June 13th.	P.	,,	7 days.	D.	—
D.	,, 23rd.	P.	,,	9 days.	D.	Scarlet fever a few yards away.
R.	July 10th.	M.	,,	—	R.	—
E.	Sept. 17th.	P.	,,	—	R.	—
H.	Oct. 31st.	M.	Mrs. T.	9 days.	D.	Drainage defective.
W.	Nov. 7th.	?	Stranger.	4 weeks.	D.	—
D.	,, 29th.	?	Mrs. S.	—	R.	Drainage defective.
D.	Dec. 6th.	M.	Mrs. P. 2.	—	R.	,, ,,
J.	,, 7th.	M.	,,	—	R.	,, ,,
J.	,, 15th.	M.	Mrs. P.	—	R.	Scarlet fever in the house a short time previously.
R.	,, 23rd.	M.	Mrs. T.	7 days.	D.	Disease developed the second day. Erysipelas upon the baby and a man in the same house.
	1893.					
E	Jan. 1st.	P.	Mrs. P.	—	R.	Overflowing closet in the basement.
Ll.	,, 7th.	M.	Mrs. T.	—	R.	Insanitary surroundings.
D.	,, 20th.	M.	Mrs. P.	—	R.	—
—	March 3rd.	P.	Mrs. P.2.	3 days.	D.	Drainage defective.
S.	,, 3rd.	—	Mrs. R.	—	D.	Insanitary closet in the basement.

are but a few privies, most of the houses having been in recent years supplied with pans and syphons, and connected with the public sewers. The water-supply is good and plentiful. The incidents of the epidemic were briefly as follows.

Puerperal fever had been prevalent in this district for many years; it is said to have been endemic in the Garw Valley. The number of cases that were reported or came to the knowledge of the medical officer of health for the period 1889-March 1st, 1893, were in—

Year.	Number of cases.	Recovered.	Died.
1889	9	4	5
1890	10	7	3
1891	14	12	2
1892	16	8	8
1893 (Jan. 1st to March 1st)	18	10	8

so that during January and February, 1893, 18 cases occurred and eight proved fatal. In 1892 the number of cases was 16, with eight deaths; in 1891 14 cases with two deaths; in 1890, ten cases with three deaths; and in 1889, nine cases with five deaths; making, in four years and two months, 67 cases, with 41 recoveries and 26 deaths. From Jan. 1st, 1892, to March 1st, 1893, 34 cases occurred; of the 26 in the Garw Valley, 12 were fatal; and of the eight in the Ogmore Valley, four were fatal. During this period (14 months) there were 793 births registered, showing a death-rate of 20·1 per 1000 registered births as compared with a mean rate of 2·5 for England and Wales. Table XXXV. shows the number of other infectious diseases that occurred in the district from 1889 to March 1st, 1893.

Of the 18 cases at Pontcymmer (Table XXXVI.) seven were primiparæ and five of them were fatal. Nine were attended by the same midwife and of these three were fatal. In six instances the drains were defective; in two the surroundings were insanitary.

Of the 11 cases at Blaengarw six were primiparæ, of whom four died. Four cases were attended by one midwife and four by another. Of the six that proved fatal all were natural and easy labours, and three, at least, were in young women. (Table XXXVII.)

TABLE XXXVII.—GIVING PARTICULARS OF CASES OF PUERPERAL FEVER AT BLAENGARW, IN THE GARW VALLEY, FOR A PERIOD OF TWO YEARS.

Initial of patient.	Date of confinement.	Primipara or multipara.	Midwife.	Duration of illness.	Results.	Remarks.
	1891.					
D.	March 3rd.	M.	Mrs. Ll.	3 weeks.	R.	Miner's wife. House clean. Natural labour. Second day rigor and temperature 102° F. Third day temperature 104°. Severe abdominal pain and tenderness. Temperature normal on the twelfth day. Mrs. Ll. also attended another case at the same place, which also made a good recovery. Medical man present at the birth of the child.
G.	,, 8th.	M.	Mrs. T.	8 days.	D.	Natural labour. Rigor third day. No abdominal tenderness. Lochia sweet. Death eighth day. Temperature 108° F. No source of infection could be traced. House clean.
J.	Nov. 21st.	M.	Mrs. T.	2 weeks.	D.	Wife of grocer. House clean. Natural labour. Rigor seventh day. Temperature varied from 102° to 104° F., but at last went up to 107° a little before death. Cause of death, peritonitis.
	1892					
M.	May 28th.	P.	Mrs. Ll.	4 weeks.	R.	Instruments used. Severe post-partum hæmorrhage. Rigor third day; temperature 105° F. same evening. Slight abdominal pain and tenderness. Discharge foul.
J.	Nov. 16th.	P.	Mrs. T.	7 days.	D.	Age 23 years Easy labour. Rigor second night. Temperature 103° F., with abdominal tenderness and cessation of lochia. None of the usual sources of infection could be traced.
B.	,, 17th.	P.	Attended by a medical man.	7 days.	D.	Aged 21 years. Easy labour. Rigor second night and temperature of 102·5° F.; great tenderness over u [illegible] id been washed with antiseptic lotions. This case was [illegible] vomiting. Her father, who lived in the same house, w [illegible] id of the leg. House clean.
M.	Dec. 20th.	M.	Mrs. T.	—	R.	Forceps delivery. Rigor and high temperature on the fourth day, which yielded to usual treatment.
M.	,, 24th.	P.	Mrs. Ll.	7 days.	D.	Easy labour. Age 20 years. Fifth day rigor, high temperature (104° F.), tympanites, and abdominal tenderness. Lochia, although profuse, were very foul; green vomiting. Died on the seventh day; hyperpyrexia. The midwife in this case had attended a fatal case about a fortnight before this one, but in the interval had, so she said, thoroughly washed and boiled all her clothes at the wish of a medical man.
H.	,, 30th.	M.	Mrs. R.	14 days	R.	Forceps delivery. Rigor and high temperature on the third day. Temperature normal on the fifth day.
D.	,, 31st.	P	Mrs. Ll.	14 days.	D.	Miner's wife. Natural labou [illegible] till Jan. 7th, when she sat up in bed to nurse the child. Rigor [illegible] temperature of 102° F. Great swelling and abdominal tendern [illegible] Jan. 14th, temperature 107°. Death took place from peritonitis. House very clean. Slight post-partum hæmorrhage.
	1893.					
W.	March 4th	P	Her mother.	—	R.	Easy labour. Rigor and high temperature on the second day. History of erysipelas in the same house 12 months previously.

measures are carried out in a systematic manner, though however thorough it may be the personal equation in a very few cases must not be forgotten. Auto-infection plays a part in some cases and infection from without in others, and [illegible] traced in all cases there can [illegible] [illegible]st asepsis in all local procedures should be practised on the part of the practitioner and septic conditions should be treated by the application of antiseptic treatment. The final word on the question as to what is the most scientific way of dealing with the puerperal period has been spoken—asepsis and antisepsis; the other question as to how the infection arises in *all* cases may be left for future work.

THE CAUSATION, DIAGNOSIS, AND TREATMENT OF PERFORATING ULCER IN TYPHOID FEVER.[1]

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THE increased frequency with which laparotomy is performed with the object of suturing a perforated intestinal ulcer in typhoid fever has rendered the differential diagnosis of abdominal complications in the course of that disease of far more importance than it was formerly. Moreover, in order that surgical treatment shall have the best chance it is imperative that a correct diagnosis shall be made as early as possible, a matter very often of extreme difficulty. I have thought that the records of a large fever hospital would furnish some facts of value bearing on the subject; hence I venture to bring it before your notice this evening. My observations are based upon the notes of 96 cases of perforation occurring amongst 1921 cases of typhoid fever under treatment at the Eastern Hospital, Homerton, during the 12 years 1892 to 1903. All these 96 cases were fatal with two exceptions, one in which an operation was performed and another where the nature and course of the symptoms justified a diagnosis of perforation, a case to which I shall refer again later. [illegible] will be found that perforation [illegible] [illegible]e cases and as there were 304 [illegible] was responsible for 31·5 per cent. or nearly one-third of the total. I think, however, that we may safely conclude that in quite a third of the total deaths perforation took place. The figures given above are not quite accurate inasmuch as a post-mortem examination was not made in every fatal case. There were 189 necropsies and in 68 (or 35·9 per cent.) perforation was found. In some of the cases perforation had hardly been even suspected during life.

Causes.—62 of the patients were males and 34 were females. I have no explanation to offer of the greater frequency of this complication in the male sex. It is seldom met with in children under ten years of age; I have notes of only eight such cases and, curiously enough, seven of them were girls. The youngest case was that of a girl aged six years. It seldom occurs in patients over 40 years of age—seven cases only—the oldest being a man aged 63 years. The ages from ten to 24 years furnish the largest number of cases (52). As perforation does not usually take place until the sloughs in the intestine have begun to separate it is seldom met with before the third week of the disease. In fact, in only five out of 82 cases in which accurate records are given of the length of the illness did perforation take place during the second week; the earliest day was the tenth. I have never known it to occur during the first week. Most of the cases occurred during the third, fourth, and fifth week (64 out of 82); in nine cases perforation occurred during the sixth, in three during the seventh, and in one during the tenth week; of these last 13 cases seven took place during relapses of the fever. Two of the fifth week cases were cases of relapse, so that 9·3 per cent. of the perforations happened during a relapse. So far as perforation is concerned relapses may be reckoned as first attacks, so that this complication is unusual during convalescence. Of an accurate note was recorded of the state of the ulcers, in 41 sloughs were still present.

With reference to the sort of case in which perforation most commonly occurs I am sure that severe cases furnish a large proportion of the total number; in 14 of the 96 cases perforation had taken place before admission, so that of those I know nothing as to the nature of the attack, but of the 82 remaining cases 39 were certainly very severe ones, while of the other 43 very few could have been called mild. And at necropsies on patients in whom perforation has occurred it is very unusual to find scanty ulceration. Amongst the 68 post-mortem examinations already referred to the mildest case from this point of view was that of a lad, aged 12 years, in whom only three ulcers were found. In the large majority of the cases the ulceration was both extensive and deep. I find, too, that in 20 of the 96 cases (20·8 per cent.) perforation was preceded by hæmorrhage which is another complication that is found most frequently in the more severe forms of the disease. The conclusions from these facts are that perforation occurs most frequently in severe cases and in the acute stage of typhoid fever.

The immediate or exciting causes of perforation that have been described are many: errors in diet; unsuitable purges, whether administered by the mouth or the rectum; straining at stool; sudden movements on the part of the patient, usually in delirium; careless movements of the patient by the nurse or attendant; and distension of the bowels. But while not denying that perforation may result from any one of these causes, more especially, so far as my own experience goes, sudden movements of the patient by himself or others, yet I do not believe that any of these are at all common. I will even go so far as to say that they are uncommon, at any rate in hospital practice. Even of the 14 cases in which perforation had taken place before the patient's admission to hospital in only one or two was there any reason to believe that the act of removing the patient had been the cause. In most of them perforation had occurred before removal. In my opinion by far the most common cause of perforation is the mere extension of the necrotic process to the peritoneal coat of the bowel. A bit of the peritoneum is included in the slough and as the slough has got to separate a hole must result sooner or later. Sometimes, when the peritoneum is involved in the inflammation that precedes necrosis, lymph is thrown out and seals the minute hole formed in the first instance but with the separation of the slough the hole becomes larger and the adhesions then give way. This is what both my clinical and post-mortem room experience has taught me. Though I have specially looked for it, I have never seen a slit-like perforation, suggesting that the peritoneum has been torn through. This condition has been described by the most competent observers but it must be very rare. I would not, however, on account of its rarity, have you think that I am for relaxing the order given to nurse and attendants that the patient suffering from typhoid fever is to be moved with the greatest possible care.

Symptoms and diagnosis.—By far the most constant symptom is pain in the abdomen; this pain is nearly always sudden and frequently severe. Still in at least 20 of the 96 cases the initial pain was slight. The seat of the pain is most often in the lower part of the abdomen, especially in the right iliac region. It is not at all uncommon, however, for the patient not to be able to localise the pain and to say that it is felt all over his abdomen. Not infrequently, also, the pain is referred to the epigastric region or even to the lower part of the chest. It may exceptionally be referred to almost any region of the abdomen. In two of the cases there was in addition to pains in the lower part of the abdomen pain at the end of the penis. One of the points that I think should be emphasised about the pain is the suddenness of its onset, even though it be slight. I doubt, however, whether one would be [illegible] merely from the occurrence [illegible] that it is important to a[illegible] other symptoms. These may be either local or constitutional. The former are of most importance: tenderness, sometimes exquisite, most often in the right iliac region; rigidity either in this same region or all over the abdomen; alteration in the condition of the abdomen in the direction of either distension or retraction, if this alteration has been observed to occur somewhat quickly after the pain. Obliteration of the liver dulness may be found quite early, but as a rule, if it does occur, occurs several hours after perforation.

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[1] A paper read before the Hunterian Society on April 27th, 1904.

Of what I may call the constitutional symptoms one of the most important is shivering. In 25 of the cases (26·0 per cent.) shivering occurred about the time of perforation or within an hour or two of it. The shivering may be of all degrees up to a severe and prolonged rigor. While shivering usually occurs at the time of the pain or soon after I have known it to precede by some hours any other signs. Thus (Case 1) a girl, aged 12 years, had a rigor at 1 P.M. on Nov. 15th but presented no abdominal signs till 37 hours later and these were the signs of peritonitis which proved fatal a few hours later. Again (Case 2), a man, aged 31 years, suffering from a very severe attack, had a rigor one morning at 10 A.M. The pulse became quick and running, the respirations thoracic, and occasionally the patient lay with his legs drawn up, an unusual attitude in this disease apart from abdominal complications. At noon the patient, who was quite conscious, declared that he had no pain at all though the abdomen was slightly retracted and rigid. It moved on respiration. There was no abnormal dulness. At 11 P.M. he was seized with severe abdominal pain, became collapsed, and died in eight hours. Other initial symptoms, important but of less *frequency, are vomiting, collapse, a change of colour in the* face (the patient becoming of a slightly grey or cyanotic hue), an anxious expression (not usual in children), the passage of two or three loose stools where previously there has been constipation or an infrequent action of the bowels, and an increase of pulse-rate. A marked fall of temperature is the exception. My belief is that a fall of temperature usually means collapse or the onset of peritonitis. At any rate, it is not often met with immediately following perforation, though it is not uncommon to find it a day or two later.

I would emphasise the statement that the sole occurrence of any one of the symptoms which I have been enumerating should always be the signal for most careful examination and observation of the patient with a view to the detection of peritonitis. When one simply enumerates a number of symptoms as indicative of any particular disorder or complication it often seems to the reader or listener that diagnosis should be, if it is not, easy. But it is very difficult, if not impossible, to convey in words the varying degrees of severity or prominence of symptoms, together with the combinations and sequences of them, all of which points are, perhaps at times unconsciously, taken into account by the experienced observer. It is a trite saying that it is easy to be wise after the event. I will relate, however, one or two cases in which I went wrong, more especially as they will serve to illustrate points about which not much is said in the ordinary text-books.

CASE 3.—A man, aged 56 years, was admitted to hospital on Dec. 15th, on the fourteenth day of his illness. He was suffering from a definite but mild attack of typhoid fever. There was nothing special about his case till two days after admission, the sixteenth day of his illness, when I was called to see him at 8.45 P.M. "Soon after 8 P.M he had a rigor, which lasted about ten minutes; his temperature was then 101° F. Now the patient is still shivering a little. He says that soon after 7 P.M. he passed a stool and then had a little abdominal pain, which he still has. It is not at all severe and is referred to the left side of the abdomen below the level of the umbilicus. The abdomen is a trifle full and the muscles on both sides a little rigid; liver dulness normal; no absolute dulness anywhere over the abdomen, but some impaired resonance in a band just below the umbilicus, stretching from about the middle of the right iliac fossa slightly upwards towards the upper part of the left iliac fossa. The percussion note, however, varies in different parts of the abdomen. The bowels were opened freely just before the rigor and again just after it. The motion was loose and somewhat pasty. Patient also vomited just after the rigor, bringing up some milk tinged with bile; pulse 102, small, not wiry, regular. No sign of collapse." Midnight: "For the last hour or so patient has had no pain; he is now sleeping quietly and the pulse is quiet. He has passed another stool with curds and probably a little slough in it. Patient woke while I was present. The rigidity of the abdominal muscles has gone off; he says he has some abdominal tenderness when he moves, mostly on the right side." Nourishment by the mouth was omitted, except a little water or ice. The next day, the seventeenth of the illness, I noted that the patient slept well during the night. There was still some tenderness round the umbilicus for about four inches. There was no more shivering or vomiting and the pulse was good (88). There was now no abdominal dulness, but the same note was present all over. Nourishment by the mouth was resumed (whey). At 6 P.M. the note was as follows: "Up to about 4 P.M. the patient had occasional pain; since that at intervals of about 10 to 15 minutes he has had rather sharp attacks of pain. He has been retching about four times. Now he has no pain, but there is some tenderness on pressure over the abdomen. He says that the pain, when he has it, is all over the abdomen and not in any particular region. The abdomen is a little fuller than it was this morning, and a little tense, equally on both sides. The percussion note is not the same all over, being a little flatter in the lower half. The liver dulness is present but confined to a strip about one and a half inches wide at the costal margin. It was more than this before. P. 96, rather smaller than before. The pulse seems to me to be too good for peritonitis or perforation. No more shivering. Not restless. The retching has been violent." At 12.30 A.M. (six hours later) the abdomen had become more tense, there was occasional slight retching, the pulse was smaller, there was hardly any pain, but slight tenderness. There was no bell-sound over the abdomen. At 9.45 A.M. the patient was much worse, the pulse was feebler, and the face was clammy. He had had pain during the night but not at all severely till about an hour ago; there was frequent vomiting; the abdomen was more distended; there was no liver dulness. He was much relieved by morphine, so that he had no more pain and no more vomiting after 2 P.M. The patient gradually sank and died at 6.50 P.M., about 48 hours after the first symptom. He was quite conscious up to the end and, in fact, during the afternoon he gave certain directions as to the disposition of his affairs.

A post-mortem examination revealed a perforation and peritonitis. The perforation was nine inches above the valve and was a large one, half an inch by a quarter of an inch. The last 18 inches of the small intestine were ulcerated. The great omentum was found covering the whole of the small intestines, reaching down to the brim of the pelvis. On the left side it was very firmly adherent to the pelvis by fibrous bands which I had to cut through. Evidently there had been peritonitis at some previous time. The omentum itself was very thick, fat, and fibrous.

The following note was made after the post-mortem examination on Dec. 20th: "This case has been most instructive. When I saw the patient not long after the rigor on the evening of the 17th I of course at once thought of perforation. The dulness I noted then I think was very likely due to the thickened omentum found post mortem. What put me off absolutely diagnosing perforation was the excellent general condition of the patient. I did not indeed put him on the visiting list[3] till I saw him at midnight, ordering the letter to go by the first post in the morning. I only put him on the 'visiting list' then as a matter of precaution, because he was better than earlier in the evening. Next morning he was still better *to such an extent that* I quite negatived the idea of perforation and resumed the nourishment by the mouth."

Had the patient not been 56 years of age (and looking somewhat older) I should, I think, have urged an exploratory operation on the night of the 17th. But his age, combined with the fact that the symptoms were slight, caused me to negative the idea. The post-mortem examination showed that it would have been, on the whole, a favourable case for operation, though the ulcer that had perforated was rather large.

CASE 4.—A youth, aged 17 years, was admitted to hospital on the twenty-first day of his illness which was severe. No unusual symptoms were observed, except that at times the patient got a little cyanotic, till the twenty-fifth day when at 10.45 A.M. he complained of pains in the abdomen and at 11.15 he began to shiver a little. I saw him at 11.30 A.M. He was still shivering a little. His pulse was 118 and the respirations were 20; previously they had averaged 98 and 28. The patient was a little dusky. The abdomen was slightly retracted and the patient said that he had pain all over it. There was very slight rigidity of the lower half of the abdomen below the umbilicus on both sides and liver dulness was present. The bowels were moved at 11.15 and at

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[3] Patients are not put on the "visiting list" unless they are considered to be dangerously ill.

11.45. I was doubtful about perforation. At 1.45 P.M. I noted that the shivering had stopped at noon. The patient was much more comfortable. The bowels had been opened once and urine passed since 11.45; the pulse was soft; there was no abdominal pain and the abdomen was not at all rigid, and the colour was better. I thought that after all perforation had not occurred. The patient had a slight attack of pain at 4.15 P.M. and again at 6 P.M. At 9.30 P.M. he was worse; since 8 P.M. he had retched two or three times, the pulse was small, compressible, and weaker and he looked worse; the abdomen was mode- [illegible] ver dulness was quite [illegible] he abdomen even on [illegible] There could now be no doubt that perforation had occurred and laparotomy was performed at 11 P.M. There were gas and fluid in the peritoneal cavity with much peritonitis. The perforation was about two inches above the valve and was closed with sutures. The patient gradually sank and died 41 hours after the operation. A post-mortem examination showed that the last foot of the small intestine was most severely ulcerated.

CASE 5.—A boy, aged 13 years, was admitted to hospital on the tenth day of a not very severe illness. On the fourteenth day, at 4 P.M., he had sudden pain in the abdomen; it was not severe enough to make him cry out but he began to make a fretful noise. The patient, I may add, had been fretful since admission and was always, as the nurses' expression is, "very sorry for himself." The pain was relieved by hot fomentations but came on again at 4.30. I did not see him till 6.40 P.M.; he then complained of pain in his abdomen and on being asked whereabouts it was he moved his hand all over his abdomen. The abdomen was a little retracted and the lower half of each rectus was distinctly rigid; liver [illegible] at 6.45 it had been [illegible] and ice was applied [illegible] 108. At 11.45 it was also 108, of good volume, and the pain was easier; the other symptoms were about the same. After 11 P.M. the boy had a good night and slept well. The next morning the abdomen was flat and not so retracted as on the previous day; it was still painful all over and rigid in the lower half. The pulse was 124 and fairly good. There was great pain during micturition; there was no vomiting or retching. The boy looked better. When he was left alone and watched from a distance he appeared to be fairly comfortable and lost the distressed look he had when anyone was by his bedside. When this note was made he was amusing [illegible] newspaper. At 3 P.M. on the same [illegible] e with severe abdominal pain and [illegible] owed the usual signs of peritonitis [illegible] seventeenth day.

At the post-mortem examination a minute perforation was found eight inches above the valve. There was most intense general peritonitis. The ulceration of the small intestine was not severe. In each of these three cases a distinct remission of the symptoms occurred which quite deceived me and led me to suppose that after all such a serious event as perforation had not taken place. If the chief symptoms indicative of perforation were not met with in other conditions in typhoid fever the diagnosis would be very much simplified. But sudden (and even severe) abdominal pain, shivering, and rigidity of abdominal muscles may all occur and yet as far as one can be sure no perforation have taken place. For instance (Case 6), a man, aged 32 years, suffering from a rather severe attack of typhoid fever, was seized one morning with marked shivering and abdominal pain. There was, at the time no local symptom besides the pain. Shortly afterwards the patient vomited. In the evening the abdomen had become somewhat distended and there was pain in each iliac fossa. The patient was retching and had hiccough. His pulse gradually failed and he died 14½ hours after the onset of the symptoms. The post-mortem examination revealed severe ulceration of the ileum. Several of the ulcers were large and their bases were very thin. On the peritoneal aspect were patches of lymph and there was a little lymph on the under surface of the great omentum. There was some dark serous fluid in the pelvis. There was no general peri- [illegible] h was made no perforation [illegible] be found.

[illegible] s, was admitted to hospital [illegible] een suffering from severe abdominal pain and diarrhœa for four days before admission. On admission he was found to be somewhat collapsed, was perspiring freely, but had a fair pulse. The abdomen was full and tympanitic, it was tender on palpation, and there was pain in the right iliac region. Breathing was thoracic. His temperature was 100·2° F. and the pulse was 96. Laparotomy was performed five hours after admission but absolutely nothing wrong could be found in the abdominal cavity. The abdominal pain p[illegible] tinued to progress fairly well. [illegible] signs of right basal pneumor [illegible] quickly became worse and died the same evening.

Permission was given to examine the abdomen only, but except for the intestinal ulcers nothing wrong was found. It was a question in this case whether the abdominal pain may not have been the referred pain of pleurisy.

CASE 8.—A man, aged 33 years, was admitted to hospital on the fourteenth day of his illness. It was noted on admission that the abdomen was hard and resistant. I was requested to see him the next day because it was a question whether perforation had taken place. At 11 A.M. he had had an attack of abdominal pain which increased during the next two hours. At 1 P.M. the abdomen was full and resonant all over. It was rigid on firm palpation; the liver dulness was obscured. There did not seem to me to be quite sufficient evidence to justify an operation. Hot applications to the abdomen gave much relief and next day all the pain had gone. On the twentieth day of his illness (five days after the attack of pain) there were well-marked signs of pleurisy with effusion on the right side. Possibly this (as in the case related above) was enough to give rise to the abdominal symptoms. At any rate, when five days later I performed a laparotomy on account of unequivocal symptoms of perforation I could find no evidence of any previous abdominal lesion. The patient recovered.

I could give notes of other cases in which, though perforation [illegible] during life, [illegible] with these [illegible] peritonitis [illegible] two in which there were abdominal symptoms suggestive, though by no means conclusive, of perforation or peritonitis, but in which the patient recovered and the diagnosis was never cleared up.

CASE 9.—A woman, aged 28 years, was admitted to hospital on Dec. 3rd with typhoid fever. She had been ill for rather more than a fortnight and five days before admission she had miscarried. She had a sharp attack but did very well and was beginning to convalesce (her temperature having shown signs of settling down to normal for upwards of a week) when on Dec. 27th at 4.30 A.M. she was during sleep seized with very severe abdominal pain and vomiting. The medical officer was summoned; the patient had pain, tenderness, and slight rigidity in the right iliac fossa. The pulse was 140, small, and somewhat wiry, and the temperature was 98° F. It was thought that something serious had happened and her friends were sent for. But in the course of three hours or so the urgent symptoms had all gone and by the evening the patient was as well as she had been before.

CASE 10.—A woman, aged 28 years, was admitted to hospital on Dec. 19th, having been ill since the 4th. She went through a severe attack of typhoid fever and her temperature did not settle down to normal till Jan. 16th. Ten days later, [illegible] on of the liv [illegible] was at firs [illegible] vere. There [illegible] wing night the temperature rose to over 100° F. The pain became worse. There was bilious vomiting on seven occasions between 1 P.M. and 1 A.M. The patient preferred to lie on the right side. Her face wore an anxious expression. Her pulse was small and running; the rate was 168 at noon and remained high during the day, being 152 in the evening, when the temperature was nearly 103°. The abdomen was not distended; there was exquisite tenderness over the region of the gall-bladder, where there was some fulness. The abdominal wall was held rigidly, the rigidity being most marked on the right side. There was just a faint yellowness of the sclerotics. There was impaired resonance or percussion over the whole of the right half of the abdomen to about two inches above Poupart's ligament. There was no vomiting between 1 A.M. and 2.30 P.M. A simple enema was administered which produced a fairly copious, brown, formed stool. No stones were to be found there was right basal pneumonia but no peritonitis. There were several healing typhoid ulcers in the intestines.

The case in which a suppurating mesenteric gland had given way and caused death by setting up peritonitis (Case 18) was that of a woman, aged 42 years, who died on the twenty-third day of her illness. The symptoms were those of peritonitis only.

Of the three cases in which the perforation was situated in the large intestine in one instance it was in the ascending colon, in a second in the descending colon, and in the third in the sigmoid flexure. The latter two were diagnosed as perforation cases; there was pain which was most marked in the left side of the abdomen. The first case of the three (Case 19), however, was not diagnosed as regards the perforation. The special symptoms connected with this were pain and œdema in the right flank for four days before death and occasional vomiting. Post mortem there was an abscess behind the cæcum; there was no general peritonitis. These three cases were all very severe ones.

The three appendix cases were all interesting and difficult. In one (Case 20), a girl, aged eight years, a sudden attack of abdominal pain had occurred on the twentieth day. She said that the pain was all over the abdomen. The abdomen was sunken and soft and there were absolutely no localising signs but the patient was suffering from a very severe attack of typhoid fever and was at times delirious. There was no more pain till the twenty-eighth day. On the thirtieth day I made a careful examination; the abdomen was moderately distended but quite supple. The patient cried and moaned when the abdomen [illegible] was painful; but there was no sign [illegible] or even peritonitis. She died on the [illegible] It was found that the appendix was bound down to the brim of the pelvis by soft adhesions; in it were two perforations. There were about four ounces of creamy pus in Douglas's pouch but there was no general peritonitis.

In the second case (Case 21), that of a woman, aged 23 years, there was indefinite pain in the abdomen on and off for 18 days before death, with occasional vomiting. The day before death there was some rigidity of the abdomen. Perforation was not diagnosed. Post mortem there was general septic peritonitis due to a perforation of the appendix.

In the third case (Case 22), that of a boy, aged nine years, the patient had a mild attack followed by a relapse on the twenty-third day. On the twenty-fifth day a small nodular swelling was observed in the abdominal cavity to the left of the umbilicus. The abdomen was full and tympanitic. On the twenty-seventh day there was bilious vomiting, which continued occasionally till the patient's death on the twenty-ninth day. There was some slight abdominal pain about this time but it did not last long. Beyond slight abdominal distension and the indefinite mass already mentioned which could still be felt on the twenty-seventh day, there were no abdominal signs and perforation was not diagnosed. Post mortem there were general septic peritonitis and a perforation close to the tip of the appendix.

I have looked through the notes of the 59 cases in which the small intestine was perforated and in which a necropsy was made in order to find out whether there were any signs to indicate the distance of the perforation from the ileo-cæcal valve, but I do not find that there were. It is true that in one case,[5] that of a woman, aged 39 years, who died within ten minutes of the bowel having given way, the perforation was found a little higher up than usual—two and a half feet—but I think that was merely a coincidence, for in other cases in which the perforation has taken place as high or even higher the symptoms were no more acute or severe and the fatal termination did not occur sooner than in those cases in which the perforation was situated close to the valve.

I have spent a considerable time on the question of diagnosis because that is the most important one. If perforation is diagnosed there is only one course to be followed—viz., laparotomy, with usually suture of the perforated portion of bowel. After reading through the reports of a number of a cases that have been operated upon, recorded in various journals and periodicals, I quite agree with Finney[6] in his conclusion that a moribund state of the patient is the only contra-indication to operation; it is certainly astonishing what patients who are desperately ill with typhoid fever will stand. I suppose everyone will agree with me in saying that if the patient is left he is almost certain to die. I am aware of the fact that cases are on record in which patients have recovered after having presented all the symptoms of perforation and peritonitis, and I believe that some of these cases really have perforated. An extremely interesting case of the kind is reported by Hare in his work on the "Cold Bath Treatment of Typhoid Fever" (p. 182). In this instance the patient died from some other complication six weeks after the occurrence of perforation and the post-mortem appearances quite bore out the diagnosis. For the full details I must refer you to Hare's account of the case. In my own practice I have had one such case (Case 23). A young woman, 20 years of age, was seized on the nineteenth day of a severe attack of typhoid fever with severe abdominal pain. The pain continued. On the twenty-first day the abdomen was rigid and painful, especially in the right iliac region. Respiration was laboured, there was vomiting, and the expression of the countenance was anxious. On the twenty-second day at 8 A.M. the patient, having had pain and retching during the night, became pulseless and cyanosed but revived with champagne. On the twenty-third day the abdomen became distended and tympanitic and there was dulness in the right iliac fossa. Next day there were also marked tenderness and some swelling of this region. On the twenty-fifth day it was noted that the abdomen was very tense and the skin pitted on pressure and on the twenty-sixth day there was a [illegible] pointing to some peritonitis (probably [illegible] d on and off for nearly three weeks longer, the only new symptom being marked peristalsis which was noticed on the thirty-second day. The patient ultimately made a good recovery. I may add that in this case an operation was [illegible] i. Such cases, however, are very exceptic [illegible] ie I have related to the 68 in which the fact of perforation was ascertained by a post-mortem examination a recovery rate of 1·4 per cent. is obtained. Now, this is very much lower than that of cases operated upon, even when all allowances are made for selection of cases. The recovery rate in 362 cases collected by Harte and Ashhurst[7] was 26 per cent. They tabulated all the cases they could find recorded from Mickulicz's first case in April, 1884, to about the middle of 1903. Hawkins estimates the recovery rate after operation as about 25 per cent.[8] I cannot help thinking—nay, I am pretty sure—that this rate is considerably higher than is actually the case. Whereas I believe that very nearly every successful case gets reported I am sure—for I know of some—that every unsuccessful case does not. Of 49 consecutive cases occurring in the Asylums Board's hospitals, 36 of which have been reported in the Board's annual reports, four recovered, a recovery rate of 8 per cent., which is much higher than that of patients left to themselves but very much lower than that of the cases collected by Harte and Ashhurst.

I do not think that it is necessary for me to do more than mention the most essential points about the operation. They are: 1. Early operation, which means early diagnosis. I would not now hesitate to open the abdomen if there had been sudden though not necessarily severe pain, with localised tenderness and rigidity, more especially if there had been also shivering. I know that occasionally a perforation will not be found, sometimes not even peritonitis will be found. But the results of published cases of this kind are very favourable. Of 26 such cases collected by Harte and Ashhurst in the paper already quoted—cases in which no peritoneal lesions were found—16 recovered. It has been suggested that the abdomen should be explored in what has been termed the pre-perforation stage. But I do not believe it is possible to diagnose this condition and I do not recommend an operation in cases where there are only such vague symptoms as pain and distension. I am quite sure from what I have seen at operations for perforating typhoid ulcers that peritonitis may precede the perforation. Very often, however, the signs of preceding peritonitis are not at all obvious and one is astonished to find at an operation performed within two or three hours of the symptoms of perforation most severe and extensive peritonitis at the existence of which one had not even guessed. Of course, if there is profound collapse following immediately upon the admit of it. But my experience is that serious collapse immediately after perforation is the exception rather than the rule. 2. Rapid performance of the operation is of course very advisable. And one thing necessary to insure this is that the perforation should be found as soon as possible. In most of the cases the perforation takes place within 24 inches of the ileo-cæcal valve. In 55 cases in which the exact site of the perforation was noted post mortem in 32 it was within 12 inches of the valve, in 15 in from 12 to 24 inches, in five in from 24 to 36 inches (in one of these it occurred in Meckel's diverticulum; the only sign was tenderness on pressure on the abdomen and perforation was not diagnosed during life), in two in from four to five feet, and in one over five feet. Therefore it is hardly necessary to say that if the perforation is not found at once on opening the abdomen the ileo-cæcal valve should be taken up and the small intestine examined upwards from it. If no perforation is detected in the small intestine the appendix and large intestine should then in their turn be scrutinised.

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[5] See THE LANCET, June 23rd, 1894, p. 1560.

[6] Quoted by Hector Mackenzie, Practitioner, January, 1904, p. 153.

[7] Annals of Surgery, January, 1904.

[8] The Practitioner, January, 1904.

As in most cases the perforation is found in the right lower quarter of the abdomen I think that the best incision is one in the right linea semilunaris or thereabouts. But I think that if I had to deal with a case where the local symptoms were most marked in some other region I should make my incision accordingly. In most instances it will be sufficient to suture the perforated intestine with a Lembert's suture or one of a similar nature. But if it be found impossible to do this on account of the large size of the ulcer or the thickness or induration of its edge I think that probably the best course to pursue is to fix it in the abdominal wound, making an artificial anus which one would hope to deal with later. Other methods of treatment (such as resection of the affected portion of gut) require more time and skill and are therefore to be undertaken only in special circumstances. As to whether irrigation and drainage should be employed depends on the nature of the case. They should certainly be carried out if septic peritonitis is found.

I need hardly go into other details of the treatment here. I will only mention that, unless the patient is suffering very severe pain before the diagnosis is made and laparotomy definitely determined upon or rejected, it is not wise to dose the patient with narcotics which will only mask important symptoms. I believe this occurred in one of the cases of perforation of the gall-bladder mentioned above. As regards the anæsthetic for the operation I have used a local anæsthetic in one case only (eucaine); that was not a success and a general anæsthetic had to be resorted to after all.

ON THE BENEFICIAL EFFECTS OF SODIUM ARSENIATE EMPLOYED HYPODERMICALLY IN TSETSE-FLY DISEASE IN CATTLE.

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SOME months ago the Government of Southern Nigeria established an experimental farm with the intention of teaching natives to use cow's milk as an article of diet for their children and thereby to put a natural check on twin murder by removing the reason on which this practice is based—viz., the inability of most ill-fed native women to rear two children. The site was selected as being one of the few localities where horses and mules thrived fairly well and 22 cattle, principally West Indian, were established there. These remained in health for a month and gave large quantities of milk, then the flow practically ceased and the animals became rapidly emaciated. The symptom which at first directed attention to the condition of the animals was an unwillingness to eat and on examination the teeth were found to be loosened; it was also noticed that there was a running of water from the eyes. The limbs below the knee and hock were the seat of a puffy swelling which did was con[illegible] in the form of a hard, elastic, [illegible] bove the hoofs in front and a m[illegible] corresponding locality behind. In most cases there was a noticeable difficulty in passing urine, the animals "hunching" themselves up and straining very much during the act and the flow instead of being continuous was intermittent, which suggested loss of contractility of the bladder.

The affected animals rapidly lost flesh; the lymphatic glands, especially those in the groin, the axilla, and the root of the neck, became very much enlarged; there was moderate fever, intermittent in character, and never exceeding an elevation of 3° F.; the respirations were markedly increased in number and in the early stages there was a dry, hacking cough. After the lapse of a month drowsiness supervened, deepening into profound slumber which lasted 36 hours and terminated in death. Most of the animals died before the onset of the sleepy stage from obstinate constipation and retention of urine, due probably to paralysis of the intestines and bladder.

Dr. Chichester, who first examined the animals' blood, found the trypanosoma present, and Mr. Young, the superintendent, has drawn my attention to a peculiar spirillum-shaped organism with very active motion present in large numbers in the blood of one of the animals. This I am at present investigating.

Fowler's solution of arsenic was administered in one-drachm doses three times daily without giving rise to any material improvement. Later single doses of one ounce daily were given. These had to be discontinued as they increased the already existing tenderness of the mouth to such an extent that the animals refused all food and their general symptoms became aggravated.

In these circumstances I prepared a 1 per cent. solution of sodium arseniate, rendered slightly alkaline with sodium bicarbonate, and selecting the worst case where drowsiness had supervened and the condition appeared to be hopeless I injected one ounce of the solution subcutaneously on two occasions at an interval of a week. The beneficial effect was marke[illegible] firm, the appetite reappe[illegible] as hardly apparent on ins[illegible] apidly, and the quantity of milk, which had fallen to three-quarters of a pint, increased in a month to seven pints. The injections were tried with similar good results on all the surviving cattle.

The supply of arseniate solution having run out the injections were discontinued, with the result that the cattle maintained their improvement for a month and then slowly relapsed. Fowler's solution was then injected in one-ounce doses but it caused such extensive sloughing that it had to be discontinued. The arseniate solution is now being tried in two-ounce doses of 1 per cent. solution injected fortnightly with promising results.

There is no doubt from these experiments that single large injections of sodium arseniate, ten grains or even more, well diluted and given at intervals of a fortnight, exercise the most marked beneficial results in cases of advanced tsetse-fly disease in cattle, and I believe that in this procedure, combined with the prevention of reinfection, will be found the most satisfactory treatment of the condition. I would also suggest its employment in the human subject, in whom single injections of 20 minims do not seem to produce unpleasant effects.

Asaba, Southern Nigeria.

THE DOWNES ELECTRO-THERMIC ANGIOTRIBE.[1]

BY H. MACNAUGHTON JONES, M.D. Q.U.I., M.A.O. R.U.I. (HON. CAUSA), F.R.C.S. IREL. & EDIN.

I SHOW these appliances for Dr. Andrew Downes of Philadelphia and you will agree with me that they are as skilfully devised and as beautifully constructed instruments as one can well conceive. It will be remembered that so far back as 1862 Baker Brown used the cautery in the

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[1] Shown and described at the meeting of the British Gynæcological Society on June 9th, 1904.

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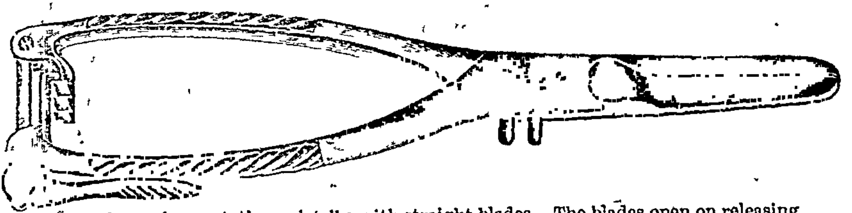
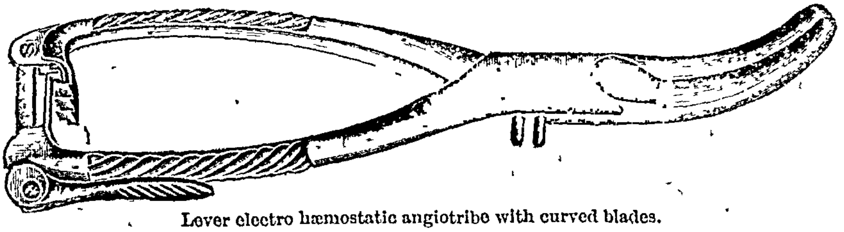
[illegible] Keith also adopted this method and so did Lawson Tait. Byrne adopted the galvano-cautery with considerable success for operations on the uterus, especially in malignant conditions. To Skene of Brooklyn, however, is due the credit of introducing the practice of electro-hæmostasis—that is, the control of hæmorrhage by the combination of forcipressure with heat produced by electricity.[2] Jacobs of Brussels in 1899 advocated it instead of ligature, clamp, or forcipressure by lever, the advantages claimed being that there is no sloughing of the tissues, that it enables us to act on a large surface, occluding the lymphatics and opposing an obstacle to the spread of infection. Also, no bleeding surface is exposed which is calculated to form adhesions with surrounding structures. Again, where tissues are friable and the application of a ligature is risky the application of hæmostasis is safe. Jacobs used various hæmostatic clamp forceps and indicated their use in cases of ovarian cystoma and pan-hysterectomy, as well as in appendicectomy and resection of the omentum.[3] He had then (August, 1899) performed six abdominal hysterectomies and two ovariotomies, besides other operations, without an accident and Skene had carried out over 200 cœliotomies without any hæmorrhage. The strength of the current was regulated by the interposition of a galvanometer, the time necessary for the desiccation being from half a minute to two minutes.

FIG. 3A.



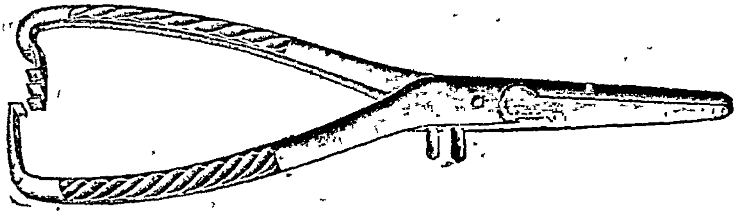
Lever electro-hæmostatic angiotribe with straight blades. The blades open on releasing the lever.

FIG. 3B.



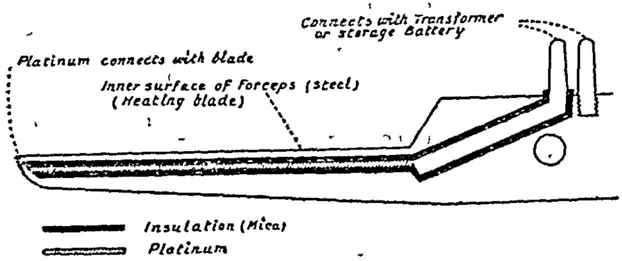
Lever electro hæmostatic angiotribe with curved blades.

FIG. 3C.



Electro-hæmostatic forceps without lever.

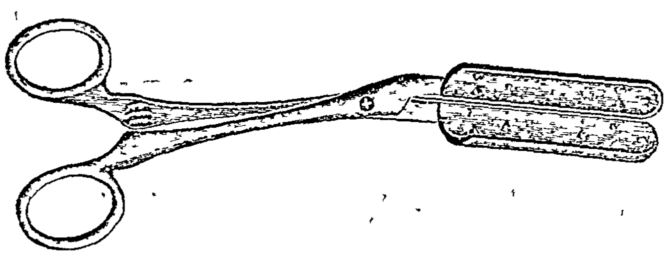
FIG. 1.


Connects with Transformer or Storage Battery
Platinum connects with blade
Inner surface of Forceps (steel) (Heating blade)
Insulation (Mica)
Platinum

Section of the heating blade.

The [illegible] aimed at by Dr. Downes were t[illegible] the heating point to 212° F., the insuring of cool shafts and handles to the instrument, greater security in the construction of the blades for the resistance of heat, and increase in the degree of pressure exerted.[4] The outfit consists of three angiotribes with blades of different widths, a quarter, three-eighths, and half an inch, one of the angiotribes being curved; a shield to protect the surrounding parts, a cautery knife, cable, transformer for use with the continuous or the alternating current, and the necessary electric supply. A maximum current of 60 ampères is necessary and the platinum in all the instruments should be of the same weight. The advantage of this high ampèrage is that the heat developed in the platinum causes the blades to heat more rapidly and effectually than with the lesser current, while there is less risk of burning out the platinum. The cable used is composed of mineral and rubber and will stand indefinite boiling, while it can be made in two portions so that the coupler alone need be sterilised for each operation.

FIG. 2.



Protecting shield.

Fig. 1 shows the section of the heating blade, the inner surface being made of steel, inside which are the layers of mica insulating the platinum. It also shows the connects with the transformer of a storage battery. Fig. 2 illustrates the protecting shield. Fig. 3A shows the lever angiotribe closed and Fig. 3B the same with curved blades. On releasing the lever the handles spring open. On reclosure when the lever is adjusted greater pressure is exerted on the blades. Fig. 3C shows the angiotribe without the lever. It is less powerful in its forcipressure action than that with the lever. Fig. 4 shows the cable and coupler. Dr. Downes has devised a foot breaker for the control of the current, so that it may be turned on when required by pressure of the foot. All that is necessary to heat the instruments is gradually to turn on the rheostat of the transformer until the platinum in the cautery knife (Fig. 5) or in the heater is a bright red. The transformer may be set at this point in the operating room, thus securing the necessary electrical supply by pressure of the foot at the required time. Water placed on the pressing surface of the blades will boil in 10, 15, or 20 seconds, according to the width of the blades already mentioned. From 10 to 30 seconds longer must be allowed after the application of the instrument for the hæmostasis.

In the latest reprint of his pamphlet on the subject Dr. Downes enters into details of the various operations—such as ovariotomy, salpingo-oöphorectomy, herniotomy, appendicectomy, and various intestinal operations, as well as those on the stomach—which may be performed by this method. He also describes the particulars of operations of hysterectomy, abdominal and vaginal. He has collected the particulars of 80 hysterectomies, 200 salpingo-oöphorectomies, one nephrectomy, 200 appendicectomies, and 20 ovariotomies for ovarian cysts, 16 of the hysterectomies being for cancer. Amongst those who have specially written on this method of hæmostasis are Hirst and Charles Noble of Philadelphia, Bovée of Washington, and Goldspohn and Murphy of Chicago.

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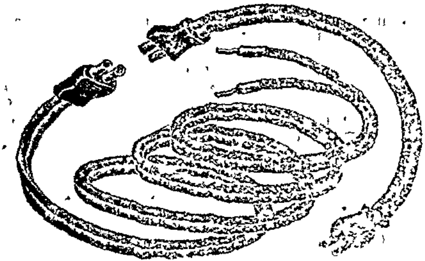
[2] Revue de Gynécologie, July—August, 1889.

[3] [illegible] Jones: Diseases of Women and Uterine Thera- [illegible] 1900.

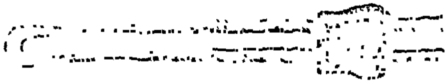
[4] [illegible] May 24th and Nov. 28th, 1903; also American [illegible]

FIG. 4.



The cable and coupler.

FIG. 5.



Thermo-cautery knife.

I h[illegible] adop[illegible] who [illegible] can [illegible] and [illegible] can be ideal." He has yet to hear of hæmorrhage after an operation in which these instruments have been used. At [illegible] ccident that [illegible] ht ureter in [illegible] h he himself [illegible] and during [illegible] n which his appliances were used, and that was not connected with the method of operation.

Messrs. Arnold and Sons have the appliances.

ON DIABETIC NEURITIS.

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IT is only of comparatively recent date that neuritis has been known to constitute a concomitant of diabetes. In making this statement it is not suggested that any new pathological state has presented itself. There are no grounds for thinking that the nerves escaped being affected by the abnormality existing in diabetes any more in former times than they do at present. What has happened is that knowledge has deepened and that attention is now given to symptoms that formerly failed to attract any special notice. Observation brings to our cognisance details that may have been previously allowed to pass unheeded before us, but once the mind has become centred upon them they are no longer likely to fail to receive the attention they merit.

Through circumstances of this nature I was led close upon 20 years ago to comment in the following manner upon symptoms of disordered nerve action that had forced themselves upon my attention in the course of my experience in connexion with diabetes [illegible] cussion on the Clinical [illegible] of the British Medical [illegible] one of the points I submitted for consideration was a set of symptoms of disordered nerve action that I had recognised as frequently to be met with in association with the disease. After alluding to them as connected with ataxia I proceeded:—

> A patient, a lady aged 48, whom I saw for the first time in 1871 and who had then been diabetic for ten years presented no symptoms of [illegible] 1880. She then began to complain of [illegible] f that year she was decidedly ataxic [illegible] patients of their condition is that [illegible] legs, that their feet are numb, that [illegible] nt expressed it, "as if he had [illegible] feeling as if his boots were a [illegible] ing or "lightning" pains are [illegible] æsthesia, so that a mere [illegible] pain; or it may be the [illegible] seam of the dress against [illegible] Not unfrequently there [illegible] escribes it, in the marrow of the b[illegible] that the [illegible] usual lo[illegible] pains a[illegible] ataxia [illegible] as happ[illegible] several [illegible] Indeed, than might have [illegible] put down by the local practitioner to [illegible] for [illegible]

Such is the narrative I gave in 1885 of the symptoms of disordered nerve action that I had noticed sufficiently often in connexion with diabetes to lead me to consider that they in some way or other constituted concomitant phenomena of the disease. It was in 1881 that my mind became possessed of the idea of giving fixed attention to the matter and I soon became struck with surprise at the frequency with which, when looked for, symptoms in one form or another of the condition in question were met with.

The description given, which as far as I am aware was the first to deal in a comprehensive manner with the variety of symptoms noticed to occur, affords a representation that meets our knowledge of the present day. Bouchard[2] about a year prior to the date of my communication drew attention to the loss of the tendon reflexes that may occur in association with diabetes, but his remarks only touched upon this particular point and were mainly directed to enlarging on [illegible] prognostic [illegible] is included in my sketch of nerve abnormalities depicted above. In their entirety the symptoms enumerated coincide with those met with in locomotor ataxia and at the time I wrote I viewed them as the result of lesion in the spinal cord. Our knowledge regarding peripheral neuritis was then in a developing stage and phenomena that are now known to be due to neuritis had previously been put down to lesion of the cord. The various symptoms of disordered nerve action associated with alcoholism were formerly attributed to disease of the spinal cord. These were the first to be shown to have been classified wrongly and to be in reality the result of lesion in the nerves. The train of symptoms associated with diabetes subsequently followed and became recognised as arising from nerve lesion. In turn the transfer has been made for the symptoms produced by certain mineral toxic agents, as, for instance, lead, arsenic, &c., and by the toxins of diphtheria and certain other diseases. Originally regarded as referable to disease of the spinal cord, they are now recognised as due to a morbid change occurring within the substance of the nerves.

Neuritis without dissent now occupies an established position as a source in some cases of symptoms so allied to those resulting from spinal disease as to have led former pathologists to regard them in such light. There is evidence to show that the change of view had been for a long time working forward but it was especially in the decade of 1880-90 that the consummation may be looked upon as having taken place. The histological change occurring in the nerve has been more studied in the alcoholic and some other

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[1] THE LANCET, Dec. 12th, 1885, p. 1098

[2] Progrès Médical, 1884, p. 819

varieties of neuritis than in that of diabetes, but the evidence that has been obtained in connexion with the latter, in the instances where the opportunity of examination has occurred, accords with that pertaining to the former. A subdued form of inflammation may be looked upon as standing at the bottom of the pathological change and the lesion noticeable consists of advancing degeneration, ending in necrosis of the proper nerve texture. In this way the functional capacity of the nerve becomes interfered with and an intelligible explanation is given of the symptoms observed. In proportion to the loss of proper structural integrity, so is it to be expected that loss of functional power should occur and observation shows that these phenomena in reality run together.

Seeing that the effect of the lesion under consideration is more or less impairment of functional power of the nerve fibrils affected the symptoms that follow will depend jointly upon the particular fibrils involved and the extent to which the morbid change in them has advanced. We have to look then for the occurrence of motor and sensory disturbances, and as the nerves, in addition to their motor and sensory filaments, contain filaments connected with the sympathetic system, vaso-motor and nutritional disturbances are likewise found to occur. Symptoms of an exceedingly varied nature thus present themselves in cases of diabetic and, of course, also in other forms of peripheral neuritis, but they fall into the natural groupings to which I will proceed to give attention, taking them in the order of motor, sensory, reflex, vaso-motor, and nutritional.

Cramp is a motor phenomenon but it occurs as a symptom belonging to diabetes without signs of the existence of neuritis. It is especially noticeable in connexion with the early stage of cases in which the amount of sugar in the urine stands high and I consider it may be regarded as attributable to the direct effect of the sugar that is passing through the system upon the muscle, looking at the speediness with which the condition disappears under the reduction or removal of the sugar from the urine by the appropriate measures of treatment.

The motor derangement produced by peripheral neuritis accords with that of locomotor ataxia. It consists, therefore, of a want of proper coördinating power over the muscles instead of ordinary paralysis. Patients are sometimes in a distressed state of mind at the difficulty they experience in walking and fear they are going to lose the use of their legs. They think their condition arises from loss of muscular power due to paralysis, but they may be easily convinced otherwise by desiring them when seated to straighten out the leg and permitting them to see the power they possess of resisting attempts to bend it. With complicated movements as in walking a properly balanced play of individual muscles is called into requisition. The lesion of the nerve fibrils is irregularly dispersed and at the same time varies in intensity. No wonder in such circumstances that there should be the manifestation of disturbed coördinating power that is observed.

As a rule the ataxia in diabetic neuritis does not reach the advanced stage that is met with in some other forms of disease producing it. I have seen in some cases pronounced disablement from it but not the extreme disablement that may be met with in alcoholic neuritis or in tabes dorsalis. In a severe case of tabes there is a very characteristic kind of walk. The walk of neuritis, although ataxic, does not reach this. It is a common thing to find that the patient cannot satisfactorily get along without the aid of a stick or an umbrella or the arm of a friend. His gait is unsteady. He feels insecure upon his legs from a want of balancing power and requires the aid of something, and a very little will suffice, to steady him. At the beginning the condition is more or less like that of a slightly intoxicated person and repeatedly I have been told by patients that they have often felt conscious of walking so unsteadily as to lead to their pulling themselves together and walking at their best lest persons who were coming behind them might form an idea which they would not like to be entertained. Indeed, I am able to quote one case in which the circumstances were such as actually to call for my giving a certificate to rectify an erroneous conclusion that had been formed. The patient was a Nonconformist minister and a damaging report had become spread about with regard to him founded upon the resemblance of his gait to that of an intoxicated person.

It occasionally happens that a certain amount of ataxia is noticed by the patient without any of the sensory phenomena of neuritis being observable and in cases of a mixed nature the ataxia may stand out of proportion to the sensory phenomena. On the other hand, the converse may occur and with little or no ataxia there may be pronounced trouble of a sensory kind discernible. The two certainly are not always conjoined and the precise symptoms occurring obviously depend upon the particular nerve fibrils that constitute the seat of lesion. The nerves of the upper extremities are far less prone to be implicated than those of the lower. Whilst the gait is allied to that of tabes the neuritic patient, according to what I have seen, can maintain his equilibrium when standing with his feet together and his eyes shut to a far more perfect extent than can the tabetic. I have often submitted to this test diabetic patients suffering with ataxic symptoms and have, certainly as a rule, found that they stand with pretty nearly the same steadiness as a healthy person. It must be borne in mind in connexion with this matter that the muscular sense comes into play as one of the factors concerned and this may be at the foundation of the difference alluded to. Other points of difference may here be referred to. The Argyll-Robertson pupil phenomenon and the abnormal state of the rectal and vesical sphincters met with in connexion with tabes do not form a part of the motor derangement associated with neuritis.

Fibrillary contractions unattended with any sensation are sometimes visible over some of the muscles. They appear like wavy oscillations or twitchings under the skin and doubtless depend on an exciting effect exerted by the lesion on particular nerve fibrils.

The sensory symptoms of neuritis are with marked frequency met with as an accompaniment of diabetes and have often been misinterpreted by the medical practitioner. It has not been uncommon for them to have been put down to gout and I can recall from former experience more than one instance in which my advice has been sought for the diabetes and the suggestion has been made by the local medical attendant that as regards the gout I might leave this to him to look after. It is unfortunate if the symptoms fail to receive their proper interpretation, as treatment can render no service unless directed to the control of the diabetes which lies at the root of the trouble.

There is much variety in the symptoms complained of which is not to be wondered at seeing that the precise location and the extent of the lesion exert their influence on the result occurring. Phenomena arising from exalted activity on the one hand, or impaired activity on the other, are in different cases noticeable. Hyperæsthesia localised to different parts frequently exists. At other times there may be numbness, tingling, sensation of "pins and needles," and other paræsthesiæ spoken of as present. Sometimes the soles of the feet are extremely tender, rendering walking painful, or in other cases the patient may assert that he does not feel the ground properly or that it seems to him as though he were walking on pebbles or on pointed projections. Aching, deep-seated pains in the limbs, sometimes conjoined with "lightning" pains, may be experienced and it is often stated that there appears to be a tenderness of the flesh and bones. Usually the pain is worse at night than in the day and the patient may say that he finds it difficult to place his legs in a sufficiently comfortable position to enable him to get off to sleep. The tenderness of the limbs may be such as occasionally to lead to the employment of a pillow or something of the kind to escape from the distress occasioned by one leg resting on the other. Whilst it is infinitely more common to find the legs constituting the seat of neuritis than the upper limbs yet sometimes the latter are affected and much pain as a result may be experienced in them. I may state that I have also upon a few occasions come across waist girdle pain cases comparable to those met with in tabes. In one the distress occasioned was exceedingly severe.

The reflexes give the earliest sign of the impaired nerve power occasioned by neuritis and the knee reflex is the one that is ordinarily appealed to for information upon the point. As I have already stated, much was made of the knee phenomenon when it was first recognised as an accompaniment of diabetes and somewhat wild speculations were framed regarding its diagnostic and prognostic value. In reality it may be regarded as simply an issue of the toxic action of the sugar contaminating the system upon the nerves. Afferent sensory and efferent motor nerves with an intervening impulse-producing centre are involved in the operation of reflex activity and with such a working continuity needful it is not surprising that the phenomenon under consideration should stand in the position it does as an early sign of nerve implication arising from diabetes.

Absence of knee-jerk constitutes a very common accompaniment of diabetes. I do not know that any advantage is to be derived from saying more than this about the frequency of the association. The symptom is met with in all types of the disease where the passage of sugar to a pronounced extent has for some time occurred. In a chronic case of middle and after-middle life that has not been kept under proper control I consider it may be looked upon as exceptional for escape from loss of knee-jerk to occur. Duration seems to constitute a more important factor in connexion with the matter than intensity simply as such. The loss of knee-jerk may occur and the condition subsequently become rectified. This cannot be looked for unless amelioration as regards the diabetic state should take place. The symptom constituting, it may be considered, the primary effect of the toxic influence of the sugar traversing the system upon the nerves, so long as the sugar is there the cause continues in operation and maintains the condition, but if the sugar should be made to disappear the opportunity is given for the nerves to recover their natural state and thence for the symptom to subside. With a recurrence of sugar in the system a return of the symptom, as might reasonably be expected, is liable to occur.

(To be continued.)

THE TREATMENT OF HÆMORRHOIDS AND ALLIED CONDITIONS BY OSCILLATORY CURRENTS OF HIGH TENSION.

BASED ON AN EXPERIENCE OF 118 CASES.

BY T. J. BOKENHAM, M.R.C.S. ENG., L.R.C.P. LOND.

THERE are probably few individuals who reach middle age without having at some time suffered from some form of rectal congestion. The trouble is fortunately in most cases of brief duration and yields to one or other of the many domestic remedies for such conditions. Still, there remains a goodly proportion of sufferers who after a greater or lesser number of recurrences are compelled to seek advice. It is the fear of an operation being advised which deters many from doing so more promptly, and as the difficulty of affording relief is far less in recent cases than in those which have been allowed to become chronic it seems well to give careful consideration to any proposed method of treatment which tends to reduce the proportion of cases for which operative measures are usually required. Such an alternative was suggested in 1897 by Professor Doumer of Lille and the method has since been tried by many others both on the continent and in this country.

The advantages claimed by Doumer for his method of treatment of hæmorrhoids and sphincter fissures by currents of "high frequency"—viz., that the treatment is painless, that it involves no interference with ordinary occupations, and that it effects a cure in a very high percentage of cases treated—are so striking that should these claims be well founded the method certainly deserves to be more widely known. Analysis of the cases published by foreign observers shows a remarkable consensus of opinion in favour of the electric method of treatment, and it seems to have been admitted pretty generally by all who have put matters to a practical test that (1) Doumer's method is strikingly and quickly successful in cases of sphincter fissure and in healing the small fissures so often associated with hæmorrhoids; (2) [illegible] with simila[illegible] external and [illegible] not exhibit [illegible] tissues (it aff[illegible] conditions exi[illegible] panied by m[illegible] hæmorr[illegible] and at [illegible]

Duri[illegible] tunity of applying the treatment as advocated by Doumer in considerably over 100 cases of rectal trouble of varying severity so that I feel fully justified in presenting the following brief outline of the method itself and of the results obtained by it in my hands.

The method.—All that one needs is the group of transformers, condensers, oscillator, &c., generally known as a "high-frequency" installation, and a few metal and glass electrodes of various sizes and forms. Doumer seems to prefer an electrode of conical shape, but I think that the exact form is of minor importance so long as the electrode can be passed right through both sphincters and is of such a diameter that its surface can come into intimate contact with every portion of the area to be dealt with. The glass electrodes used have in some cases been filled with a conducting material such as granulated carbon or acidulated water, while in others they are of the "vacuum" type. Personally, I prefer these last, and in those which I now use the vacuum has been carried to such a point that, when excited, there is an abundant production of x rays. I find that an electrode of low vacuum is more unpleasant to the patient and also of less therapeutic efficacy. When metal electrodes are used currents of considerable quantity and very high potential can be applied to the patient without producing any local sensation beyond a feeling of slight warmth. In some instances I have in this manner employed a current of from 450 to 500 milliampères (measured by a hot-wire instrument) and of such a high potential that a thick spark over two inches long could be obtained on approaching any uncharged capacity to the patient's body. In using the glass electrodes a good deal of care is necessary and only comparatively small quantities (generally not exceeding from 100 to 150 milliampères) can be applied by their means without risk of causing both painful and undesirable local reactions. It is therefore necessary to attend carefully to the various points *of adjustment in order to secure the optimum conditions of* current intensity, pressure, and frequency of oscillation for the particular electrode and patient concerned. These are matters which can only be learnt by experience.

The duration of each application need seldom exceed 15 minutes at any one time. With a really powerful installation it is very easy to do too much and a local application of five minutes' duration will often suffice. The number of applications needed have varied considerably. Five or *six applications may suffice for the sound healing of many* cases of fissure, as also for the relief of recent hæmorrhoids, but in the more [illegible] over some three or four [illegible] cated. In these last c[illegible] electric treatment acts not only locally but also by a general influence exercised upon the processes of metabolism in the body.

In the following notes I have endeavoured to present in as concise a form as possible the data concerning the character of the cases treated by myself, the number of each kind, the duration of treatment, and the final result obtained. I may add that no case is included in which an interval of at least two months has not elapsed since the last electrical application and that wherever possible I have taken the precaution to ascertain the actual present condition of the patient.

1. *Simple fissures.*—Number of cases, 13. Number of applications, from 5 to 8. Result: Perfect healing in every case. Sphincter spasm was an almost constant feature in these cases and the prompt relief of this trouble was a very gratifying early result of the treatment.

2. *Acute or recent capillary piles.*—Number of cases, 25. Nu[illegible] from 6 to 11. Result: Cured, 14; [illegible]

3. [illegible] *es without marked hypertrophic changes.*—Number of cases, 31. Number of applications, from 9 to 18. Result: Cured, 6; greatly relieved, 20; improved, 5.

It is a satisfactory feature of all the cases comprising these three groups that they seldom required prolonged treatment, [illegible] almost at once, and that the [illegible] onstipation was generally [illegible] e local trouble.

[illegible] *irritable folds of skin but without marked venous congestion.*—Number of cases, 12 Number of applications, from 7 to 15. Result: Cured, none; greatly relieved, 6; improved, 6.

5. *Large venous external and internal piles.*—Number of cases, 16. Number of applications, from 12 to 30. Result: Improved 7; failures, 9. Of these cases I may mention that

two were cases of recurrence after operation: nearly all were of long standing and [illegible] with chronic gastro-intestinal disorders. For such cases electricity has not, in my hands at least, shown marked superiority over other and better known methods of treatment, although its use seems quite justifiable where operative treatment is positively refused.

6. *Post-partum cases (really instances of partial rectal prolapse with feeble sphincter muscle).*—Number of cases, 6. Number of applications, from 8 to 19. Result: Cured, 4; greatly relieved, 2. In all these cases the general tonic effect on the patient was quite as remarkable as the effect upon the local trouble.

7. *Pruritus ani, with moist eczematous condition of the parts.*—Number of cases, 15. Number of applications, from 4 to 7. Result: Cured in every case.

The above is a very brief outline of my results, but I trust that it may suffice to indicate in some measure the advantages and also the limitations of this variety of electrical treatment as applied to hæmorrhoids and other minor troubles of the rectum and anus. While the results as regards complete cures doubtless leave much to be desired they are still far superior to those obtained by any other local treatment short of operation. With experience also one is getting to select one's cases more carefully and there are many among those here recorded which I would not now undertake. It must also be remembered that hæmorrhoids are in many instances merely a symptom and result of hepatic or gastro-intestinal troubles. Where that is the case it will be idle to expect anything like a radical cure so long as the exciting cause remains.

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ACCIDENTAL VACCINIA OF THE NASAL CAVITY.

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THE following case is thought worthy of publication on account of the rarity of the condition as shown by previously reported cases, of which I have only been able to find one (*vide* infra).

A married woman, aged 28 years, attended the throat department for out-patients at Guy's Hospital on April 22nd, 1904, for a "sore nose and inflamed cheek." Her history was as follows. Her last baby had been vaccinated 14 days previously and had "taken well." On the 19th, 11 days after the vaccination of the infant and four days before I first saw her, she felt her nose to be "sore and itching." The same evening the right ala of the nose and the adjacent part of the cheek and upper lip began to swell and "lumps" began to form beneath the lower jaw on the same side. There was no discharge from the nose. On the 20th the nose was very painful and a discharge like a lot of water came from the right nostril and the face became more swollen. She went to the front surgery of the hospital, where it was found that the œdema of the face had spread so that both cheeks were swollen, red, tender to the touch, and felt to be "throbbing" by the patient. There was no definite limiting margin to the swelling. The upper and lower lids of the right eye were so œdematous as to meet over the eyeball, but on separation the conjunctiva was found unaffected. The glands in the submaxillary region were greatly enlarged and tender. Although she "went off her food" she was not sick and could do her housework. Her temperature while in the front surgery is said to have been 98° F. She was given hot boric fomentations to be used every four hours. On the 21st she felt much worse and could not eat or do her housework. The pain in the swollen face was worse and when she came to the hospital erysipelas was seriously discussed. She also complained on this day of something running down into the back of the throat which had a nasty smell.

In the absence of Mr. F J. Steward I saw her on the 22nd and found the condition as follows. She was a strong, healthy looking woman. The right cheek was very much swollen, including the lower lid, the right side of the nose, and the whole of the upper lip, spreading back to the temporal region and tragus of the ear behind and below over the lower jaw, gradually fusing with a large submaxillary swelling due to the enlarged glands in this region. There was no appreciable enlargement of the glands in the anterior or posterior triangles of the neck. The mucous membrane of the mouth was perfectly normal. The swelling, she said, was much less than it had been and it was [illegible] on the left cheek. This swelling was [illegible] œdema; it did not pit on pressure but [illegible] uch. The primary cause of the trouble was quickly found. Just within the right nostril on the floor and nearer the septum than the inferior meatus was a linear ulcer, perhaps a quarter of an inch in length, with its long axis from before back. This appearance was due to a swelling of unbroken mucous membrane on either side of a linear excoriation. It showed no characteristic signs at all and even when the mucus, of which there was a great quantity, had been cleared away it would have been extremely difficult to decide upon its nature from its appearance. Fortunately additional evidence was present in the form of a small greyish area situated just below the columna of about the size of a large pin-head surrounded by a red areola. This was, undoubtedly, the result of an accidental vaccination, and I had no doubt at all that the intranasal condition was of the same nature. As mentioned above her baby had been vaccinated a fortnight before. She denied, however, that the vesicles on the baby's arm had ever been broken and said that the scabs which had formed were still intact. She never remembered the baby scratching her with its nails, but she was suckling the infant. Anyone who has watched a baby either taking the breast or being carried in the mother's lap, remembering the restless way in which babies "claw" at everything about and with special frequency the mother's face, will readily understand the ease with which inoculation is brought about. The mother had not been vaccinated since she was a baby. She was advised to continue the hot boric fomentations to the right side of the face and was ordered chinosol, 1 in 1000, to syringe the rig[illegible]. Mr. Steward saw her on the [illegible] diagnosis. On this day the [illegible] eyish surface which, as pointed out by Mr. Steward at the time, is almost typical of the condition. I watched the patient subsequently until the 26th, when the vesicle inside the nose was scabbing over, and realising that she was better she did not attend further.

The only other case which I could find of accidental vaccinia of the nasal cavity was reported in the *Birmingham Medical Review* for 1903 (vol. i., p. 390) under the title of "Two Cases of Accidental Vaccination," by Dr. E. A. Sadler. In this case there were fissures found at the right ala of the nose. The patient was a woman, aged 32 years, and her baby had been vaccinated three weeks before. The mother had not been vaccinated since infancy.

Of 46 other cases of accidental vaccination which I found reported in various journals, 31 were on the face. (Of these there were on the cheek, seven; on the eyelids or conjunctiva, or both, 11; on the chin, two; and on the lips, three.) One case is reported on the tongue, eight were situated on the trunk (including the breast, the buttocks, the penis, and the vulva), and four on the limbs. The diagnosis has usually been easy owing to the typical appearance of the vesicles. As might be expected it occurs far more frequently in women than in men, but often occurs in children, especially those who sleep with recently vaccinated brothers or sisters but have themselves either never been vaccinated or have never "taken," whilst it is not infrequent in young girls who nurse a recently vaccinated baby and not having been revaccinated themselves are liable to feel the full effects of reinoculation. The signs and symptoms are similar to those following the ordinary inoculation of the arm, but one case is reported of the loss of the eye from accidental inoculation of the conjunctiva. The inoculation is frequently multiple though seldom more than three vesicles form. One extraordinary case is reported of inoculation on eczematous surfaces where 400 separate vesicles were found. This occurred in a boy, aged two years, whose infant brother had recently been vaccinated. The two children played and slept together. The constitutional symptoms in this case were not very marked.

Below is appended a list of references to cases of accidental vaccination. No case of accidental vaccinia of the nose was found either in the Proceedings of the Laryngological Society or in the *Journal of Laryngology, Rhinology, and Otology*.

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News, Nov. 17th, 1888 (chin). Berry: Brit. Med. Jour., 1890, vol. i., p. 1483 (five cases of vaccinia of eyelids). Buckell: Brit. Med. Jour., 1889, vol. i, p. 1405 (dorsum of tongue). Buist [illegible] of [illegible] ws, [illegible] en- [illegible] gh) [illegible] ek). [illegible] and [illegible] -97, [illegible] sian [illegible] on [illegible] Med. [illegible] ews, [illegible] y Medical Journal, [illegible] junctiva) Sadler: [illegible] l. 1, p. 390 (nose (1) [illegible] 1891, p. 191 (three [illegible] mpson: Brit. Med. [illegible]

THE PRESENCE OF BACTERIA IN THE ORGANS OF HEALTHY ANIMALS.

BY H. DE R. MORGAN, M.A. OXON., M.R.C.S. ENG., L.R.C.P. LOND., D.P.H. CANTAB.

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THE possible occurrence of bacteria in the organs of normal animals has been made on many occasions a subject of inquiry. The question is obviously an important one whether considered clinically or scientifically. The interior of the healthy organism has usually been regarded as free from bacteria and the researches of Pasteur and of Duclaux [illegible] A number of observers have [illegible] confirmatory evidence. On the other hand, a recent research published by Ford[1] furnishes, according to this author, experimental proof that normal organs do, as a matter of fact, contain bacteria. The paper gives a valuable *résumé* of the literature on the subject and from this I will quote before dealing with the author's own experiments. Meissner found no bacteria capable of development in the tissues of the healthy animal, whilst Zweifel concluded that germs were habitually present but of an anaerobic character and limited in their capacity for development by the amount of oxygen in the blood stream. The researches of Hauser led to a negative result, the microscopic examination and the cultures made from healthy tissues showing them to be free from bacteria in every case. Welch only found the colon bacillus in the internal organs in cases of distinct lesion of the intestinal mucosa and he further states that this bacillus does not invade the blood [illegible] tion. Neisser, [illegible] tamination, ren [illegible] and mesentery [illegible] tissues in nutri [illegible] at the end of two days were invariably found to be sterile. Neisser concludes "that under normal conditions no bacteria are present in the lymph or blood stream." He found, on the other hand, that after producing artificial lesions of the intestines and feeding the animals experimented on with cultures of various micro-organisms, the organs of such animals contained either these bacteria or representatives of the intestinal flora. Opitz carried out experiments on cattle in the abattoir at Breslau. Portions of the mesenteric glands from cattle were carefully sterilised on the surface and small pieces were then excised and cultivated upon agar and gelatin plates. It was found that at the end of three [illegible] majority of the tissues [illegible] l from a small number [illegible] aring organisms—e.g., [illegible] that the mesenteric [illegible] and that bacteria do [illegible]

Ford emphasises the fact th [illegible] the incubation of the tissues [illegible] for 17 days and that organisms were found to grow in the cultures as late as the seventeenth day. Neisser and Opitz, on the other hand, drew their conclusions from specimens which had only been incubated for a period of three days. Ford in a series of experiments made with 30 organs removed from rabbits found that 66 per cent. contained bacteria cultivable on agar, gelatin, and broth, whilst with 18 organs removed from guinea-pigs positive results were obtained in 61 per cent. The bacteria found in each case were identical and appeared in the culture media on the seventh day. It was thus only after a lapse of seven days that the organisms detected by Ford escaped from the organs which contained them and appeared as a growth in the culture soil. The bacteria found were staphylococcus albus and aureus, bacillus mesentericus, bacillus proteus, bacillus subtilis, and bacillus coli communis.

The organs of cats showed a bacterial flora different from that of the rabbits and guinea-pigs. Of 18 organs from the cat positive results were obtained in about 77 per cent. Staphylococci and colon bacilli were detected but not the bacillus subtilis or the bacillus mesentericus. The bacillus proteus, bacillus megatherium, and bacillus mycoides were found as well as two spore-bearing bacilli detected in the broth cultures. These spore-bearing forms along with the bacillus megatherium and bacillus mycoides and at times bacillus Zopfii were also present in the organs of dogs. The experiments of Ford showed that out of 96 organs taken from 34 animals 69 per cent. contained bacteria and that less than 30 per cent were sterile. It appeared advisable in view of the exceptional character of these results to repeat the experiments and I will now briefly describe the methods which I adopted and the results. Every precaution was taken in the course of the experiments to avoid aerial or other accidental contamination. A rabbit was killed, the skin was deflected from a central linear incision, and the abdominal muscles were seared with a red-hot iron. The abdomen was opened with a sterilised scalpel and ten cubic centimetres of peptone broth were poured over the intestines and immediately drawn up, together with any peritoneal fluid, by means of a sterile syringe. The fluid obtained in this way was placed in a sterile tube for subsequent cultivation. The intestines were next drawn aside by sterile glass rods and the exposed organs or portions were removed—viz., the kidney, the suprarenals, the spleen, the liver, and a few of the mesenteric glands. Each organ was quickly passed through the flame of a Bunsen burner and then divided, one portion being dropped into a flask of nutrient broth and the other into melted agar cooled down to 45° C. The organs in the broth were broken up with a sterilised knife and both broth and agar were incubated at blood heat. The broth cultures were employed to test for aerobic and the agar cultures for the growth of anaerobic micro-organisms. After 17 days' incubation portions of the organs planted in the agar were removed with a platinum needle, transferred to broth tubes, and kept for several days at blood heat under anaerobic conditions in a modified Buchner's tube and eventually examined for bacterial growth. From the organs in broth, subcultures were made in fresh broth every third day, care being taken to avoid contamination. These subcultures were kept at blood heat, and in the event of no growth occurring were reinoculated on the second or third day. 80 organs and the peritoneal fluid from ten rabbits were tested in the above manner. Growths were obtained from 23 organs in the aerobic broth cultures and from one rabbit two organs gave a growth of the colon bacillus. This latter result was, however, probably due to an accidental injury to the intestine and a consequent contamination of the surface of the organs. In no case was a growth of the colon bacillus obtained from an animal with uninjured intestines. The bacteria present in the broth cultures were non-pathogenic forms and their intraperitoneal injection in rabbits proved harmless. They consisted mostly of such common types as the bacillus mesentericus vulgatus along with a number of other non-pathogenic spore-bearing forms. These organisms never appeared later than the third day in the cultures and differed in no respect from similar organisms planted *per se* in peptone broth. From the anaerobic agar cultures no growth was obtained in any instance and I was unable to confirm Zweifel's [illegible] anaerobic organisms in the [illegible] xperiments were made with [illegible] a similar number from the [illegible] pathogenic forms were obta[illegible] ns in each case.

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[1] The Bacteriology of Normal Organs, Journal of Hygiene, 1901.

On comparing these results with those of Ford, one is struck with the similarity of the organisms found and with the fact that the percentage is much lower than that obtained by him. The number of organs tested by myself was 80 and excluding the two cultures of the colon bacillus obtained in the case of one rabbit, the percentage of positive results is 26·2 per cent., or with the above-named cultures 28·7 per cent., as against 66 per cent. in the case of 30 organs tested by Ford. It is difficult to determine whether the bacteria found were really contained in the organs or not, although every care was taken to avoid contamination. It is well known that organisms of the types detected are ubiquitous in the air and it is quite possible that the germs or their spores adhered to the moist surfaces of the exposed organs during the post-mortem examination. By way of settling this point a certain number of the animal organs were sterilised in the autoclave at a temperature of 128° C. for 20 minutes. This effectually destroyed any bacteria or their spores that might happen to be present either inside or on the surface of the organs. The organs were then placed in sterile Petri dishes in the neighbourhood of an animal on which a post-mortem examination was about to be made and exposed to the air for five or ten minutes. They were next passed through the flame, placed in broth, and incubated at blood heat for two days. In short, they were subjected to exactly the same treatment as the fresh organs in the former experiments. In the case of the organs which had been exposed for ten minutes to the air of the post-mortem room only one out of five proved sterile, whilst of those exposed for five minutes only one out of seven organs was found to be sterile. The organisms found were similar to those met with in the previous experiments—viz., staphylococci and non-pathogenic saprophytic bacilli. From these experiments with autoclaved organs the presumption is strong that the organisms detected in the previous experiments were not really contained within the tissues but that they had, in spite of the precautions taken, fallen on the surface of the organs during some part of the manipulations. In Ford's experiments the frequent opening of the test-tubes may have led to similar contamination.

It is rather a significant fact that in my experiments no growth was obtained from the spleen, which was always removed first, while the mesenteric glands, which were removed last, gave the highest percentage of positive results—viz., seven out of ten glands tested. It might, of course, be suggested that the mesenteric glands form the natural channel for germs passing out of the intestine and that their presence in these glands could thus be accounted for. An injection of five cubic centimetres of broth culture of the organisms intraperitoneally into the same species of animal gave rise to no apparent symptoms or even temporary illness. The following table gives the results of the broth cultivations from the organs of ten rabbits :—

No. of rabbit.	Liver.	Heart.	Right kidney.	Left kidney.	Spleen.	Mesenteric glands.	Suprarenal.	Peritoneal fluid.	Pathogenicity.
1	—	—	—	—	—	C. & B.	—	—	—
2	—	—	—	—	—	—	—	B.	—
3	—	—	B.	—	—	B.	B.	—	—
4	B.	—	B.	—	—	B.	—	—	—
5	—	B.	—	B.	—	—	—	B.	—
6	—	—	—	C.	—	B.	—	B.	—
7	C.	—	—	C.	—	B.	C.	B.	—
8	—	—	—	—	—	B.	—	C.	—
9	B. coli.	—	—	—	—	B. coli.	—	C.	B.coli + C. −
10	—	—	—	—	—	—	—	—	—

B. = bacillus; C. = coccus.

These results lead to the following conclusions: 1. That normal organs do not contain pathogenic bacteria. 2. That the presence of non-pathogenic organisms in the cultures is probably due to accidental contamination. These conclusions coincide with those arrived at by Meissner, Hauser, Neisser, Welch, and Opitz. After the above experiments were finished my attention was drawn to an article by A. Wrzosek[2] who found that on adding cultures of the bacillus prodigiosus, bacillus fluorescens, bacillus violaceus, and bacillus pyocyaneus to the food of certain animals and killing these animals from five to 20 days afterwards, these organisms were found in the mesenteric glands, lungs, liver, muscles, and spleen in from 30 to 50 per cent. of the animals. Wrzosek accounts for the small percentage of animals in which they were found by the supposition that the phagocytes destroy organisms in a very short time.

ON NON-FLAGELLATE TYPHOID BACILLI.

BY J. W. W. STEPHENS, M.D. CANTAB.,
WALTER MYERS LECTURER IN TROPICAL MEDICINE, UNIVERSITY OF LIVERPOOL.

THE method used by me for staining flagella with silver already described elsewhere[1] is a modification and simplification of van Ermengem's method. 1. The mordant consists of osmic acid 2 per cent., 1 part; tannin 20 per cent., 2 parts. (I find that ferrous sulphate instead of osmic acid will also give positive results, but I have not so far experimented further in this direction.) This is allowed to act for from half an hour to one hour or longer. 2. The silver solution is 0·2 per cent. silver nitrate. 3. Ammonium tannate solution. A quantity in a watch-glass sufficient for staining one slide is freshly made thus: tannin 20 per cent., 0·2 cubic centimetre; equal parts of strong ammonia and water, 1 cubic centimetre. The slides are cleaned by wiping with a cloth and then heating well on a clean wire gauze over the Bunsen flame. The emulsion is made by plunging the culture below the surface of the water in a small test-tube and allowing it gradually to dissolve off. The emulsion is made faintly milky. With a pipette I flood the cool slides with the emulsion and then allow it to drain off. When dry the slides are put in the mordant for from half an hour to one hour. They are then washed with water. To stain, a few drops of silver are put on the slide and then a few drops of ammonium tannate and the slide is rocked to and fro for a few minutes. Then I wash in water and repeat the staining three or four times. I had used this method for some time and had constantly got positive results with it, so that I felt secure in describing it last year. Shortly after having done so I was much surprised at being unable to stain flagella in a culture of typhoid bacilli which I had used for demonstrating the method. I at first thought that the method must, after all, be uncertain in spite of my previous constant successes and it was only after a considerable time that I began to suspect the cultures. Three different strains of typhoid bacilli all gave me no result. I had not a single success in many months of trials. I eventually examined these cultures in a hanging drop and found that none exhibited the characteristic active movements of typhoid bacilli but they only showed slight trembling movements. I found on consulting the most recent literature that this loss of motility was a recognised fact but I could find no statement that this was associated with a loss of flagella. It seemed to me possible that this was the cause of my failures. I procured consequently a fresh strain of typhoid bacilli recently isolated from a patient. (My previous cultures had all been very old laboratory strains.) This showed typical motility and on proceeding to stain it with the method I had been using for months without success the result was at once positive. I thought therefore I was justified in concluding that my failure to stain the old cultures was due to the fact that there were no flagella there to stain. I took further one of these cultures and passed it through a guinea-pig and isolated the bacillus from the heart's blood. The bacillus was now motile and gave the cultural characters of typhoid. I was able at the first and at all subsequent attempts to show that it now possessed flagella (the old culture still remains negative). I believe then that I am justified in concluding that we may have non-flagellate typhoid bacilli.

The bearings of this observation may be of interest. 1. It may be necessary to pass a bacillus—e.g., bacillus dysenteriæ (Shiga)—through an animal or to examine freshly isolated bacilli before we can be quite certain that they do not [illegible] in this phenomenon.

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[2] A. Wrzosek: Bulletin de l'Académie des Sciences de Cracovie, November, 1903.

[1] Thompson Yates and Johnston Laboratories Report, vol. v., Part I., 1903.

Note.—For detecting flagella it is simplest to make a smear of the culture with a thin glass filament in the same way as a blood film, a trace of water being used for dilution. These smears when stained show the presence of flagella beautifully.

Liverpool.

A CASE OF TRAUMATIC TETANUS; RECOVERY.

BY HAROLD COLLINSON, M.B., B.S. LOND., F.R.C.S. ENG.,
RESIDENT SURGICAL OFFICER AT THE GENERAL INFIRMARY, LEEDS.

THE patient, a man, aged 25 years, was admitted to the General Infirmary, Leeds, under the care of Mr. Edward Ward, on Jan. 7th, 1903, suffering from an extensive lacerated wound of the left hand and forearm, together with compound fractures of most of the phalanges and metacarpal bones. These injuries had been caused by a "brushing" machine, one of those used in the preparation of hides. Two fingers were amputated and the wounds were partially closed after careful cleansing. A considerable amount of sloughing of the bruised tissues occurred during the next few days and the limb was dressed with boric fomentations. On Jan. 15th the temperature was normal, the wound was clean, and all seemed to be satisfactory. During the evening of the 18th—11 days after the injury—he complained of slight stiffness of the jaw and the back of the neck and also of shooting pains in the injured arm. Next morning there was distinct rigidity of the masseters and posterior cervical muscles and he was sweating profusely.

A definite diagnosis of tetanus having been made a subcutaneous injection of 20 cubic centimetres of antitetanic serum was administered at noon and permission to amputate the limb was sought for; this, however, was refused, so the wound was opened up, freely syringed out, and oxygen was applied for five minutes every quarter of an hour. Chloral hydrate in doses of 20 grains was also ordered to be given every four hours. At 11 P.M. the temperature was 100·8° F. and the pulse was 112; the patient was lying wide awake, sweating profusely, and with an anxious expression. The teeth could be separated barely a quarter of an inch. His speech was slow and indistinct and was accompanied by painful contractions of the facial muscles with a well-marked risus sardonicus. The posterior cervical and lumbar muscles were rigid and the same condition was present, but scarcely so marked, in those of the abdominal wall. Another injection of 10 cubic centimetres of serum was given and permission was again sought for amputation. This was at last obtained and at 3 A.M. on Jan. 20th the limb was amputated through the condyles of the humerus, a lower site being impossible owing to the extensive laceration of the skin of the forearm. Just before the anæsthetic was administered the patient was seized with a tetanic convulsion lasting about 30 seconds with marked opisthotonos. This was the only severe convulsive seizure that occurred. At 6 A.M. the temperature was normal and the pulse was 100. At 11 A.M. he appeared slightly better and had slept naturally; the sweating was less although the muscular rigidity was quite as marked. Another injection of serum (10 cubic centimetres) was given and repeated in the evening. In the afternoon the patient slept well and the symptoms did not progress. Chloral hydrate in doses of 20 grains was administered every four hours.

During the next two days the patient's condition remained very much the same; considerable quantities of fluid food were taken by means of a rubber tube passed through a gap in the teeth and the injection of serum was repeated twice on the 21st but omitted on the 22nd. Any sudden noise was liable to cause a temporary increase in the rigidity but there were no actual convulsions. The chloral was continued and was very effectual in dulling his sensibility and procuring sleep. On the 23rd the pulse was less frequent and the patient was drowsy, so the dose of chloral (20 grains) was administered at intervals of six, instead of four hours, but the injections of serum were recommenced twice a day. At 11.30 P.M. on the 24th the muscular rigidity was more marked with considerable arching of the lumbar spine and the pulse had risen to 92. Chloral (20 grains) was again given every four hours. On the 25th he was not nearly so well and sweated profusely; during the night there were four or five slight convulsive attacks lasting a few seconds only and exceedingly painful. The dose of chloral was increased to 25 grains but the serum was discontinued. At 11.30 P.M. on the 26th he was much better, had slept well, and the muscular rigidity was much less marked. During the next 48 hours the improvement was maintained, but on the 28th he was so drowsy and stupid that the chloral was discontinued *pro tem.* This was followed by an increase of the muscular rigidity and arching of the lumbar spine and so 20 grains of chloral were again given every six hours. During the next week improvement continued very slowly and the chloral was gradually reduced to one dose at night. On Feb. 9th the abdominal muscles again became [illegible] was again increased. By the 15th [illegible]d he was *allowed to get up for* [illegible] by a bad night and considerable sweating and in consequence he was kept in bed for a few days longer. He was discharged on Feb. 28th quite well.

The foregoing case occupies a position intermediate between that of acute tetanus and the variety which has been designated "chronic" tetanus and would be best described as "subacute." The period of incubation was comparatively long, 11 days, and the duration of symptoms was one month. The rapidity with which the symptoms progressed during the first 24 hours of the attack was in marked contrast to the stationary condition which they assumed after amputation of the limb and the exhibition of chloral and antitetanic serum and it was only during the initial stage that the case could be described as acute.

With regard to the effect of treatment, one is confronted with the fact that in a certain proportion of subacute or "chronic" cases recovery is spontaneous and one cannot, of course, state definitely that in this particular instance amputation of the arm would not have sufficed. I am, however, inclined to attribute a considerable share in the favourable termination of the case to the effect of the free administration of chloral, for, as has been seen, the reduction of the dose was on one or two occasions followed by a distinct exacerbation of the symptoms. The injections of antitetanic serum did not produce any appreciable effect and in two other cases of acute tetanus which I have seen its administration was also futile, although in one case it was injected into the cerebral ventricle.

My thanks are due to Mr. Ward for permission to record the case.

Leeds.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

THE MODE OF INFECTION IN TUBERCULOSIS.

BY J. M. FORTESCUE-BRICKDALE, M.A., M.D. OXON.,
REGISTRAR AND PATHOLOGIST TO THE ROYAL HOSPITAL FOR SICK CHILDREN AND WOMEN, BRISTOL.

THE importance of the site of the oldest lesion as determining the mode of infection in tuberculosis is very generally assumed and the acknowledged rarity of primary abdominal tuberculosis in children, as seen in post-mortem records, is adduced as one argument against the frequency of infection by means of milk from tuberculous cows. In this connexion the following case in which I recently performed a necropsy is, I think, suggestive.

The child, a girl, aged five years, was born of a mother who was suffering from phthisis and was suckled till within a week of the death of the mother which occurred when the child was ten months old. The home surroundings were said to be healthy. The patient was first admitted to the Royal Hospital for Sick Children and Women, Bristol, in June, 1900 (at two years of age), for otorrhœa, under the care of Mr. H. Elwin Harris, to whom I am indebted for leave to publish the clinical history. She was then found to have phlyctenular conjunctivitis (worse in the left eye), left facial paralysis, and a foul, purulent, sanious discharge from the left ear. She was thin, anæmic, and of sallow complexion. The spleen and liver could be felt below the ribs and her teeth were carious. There were also signs of consolidation at both apices. On Oct. 6th Mr. Harris operated on the left ear in the usual manner. In January, 1901, Klebs-Löffler bacilli were found in the nose and throat, and these were continuously present till August, when they were found to be non-virulent. The child was discharged much improved in general condition in October. In November she was again admitted for necrosis of the jaw, which was successfully operated on by Mr. Harris and she was discharged in the following January (1902). There is no note of the then pulmonary condition. On August 18th, 1903, she was admitted for the third time for recurrence of the discharge from the ear. She was thin and anæmic but there were no physical signs in the lungs. She developed, however, symptoms of intracranial trouble and Mr. Harris explored the temporo-sphenoidal lobe and opened an abscess containing green offensive pus. With drainage improvement occurred but 14 days after operation pyrexia and drowsiness set in and in spite of a free escape of pus she died on Oct. 1st.

Post mortem the cerebral sinuses were found to be healthy. There was a little basal meningitis, mainly on the pons, but there were no tubercles. There were numerous deep-seated abscesses in the left temporo-sphenoidal lobe and a calcareous mass about two millimetres long in the right lobe of the cerebellum. There were some fairly recent adhesions of the pleuræ; the apices of both lungs were puckered and scarred but showed no active disease. The tracheal, bronchial, and superior and inferior mediastinal glands were enlarged, hard, and yellow, but not much matted together. In the intestine a few of Peyer's patches were congested but there was no ulceration or scarring. A few mesenteric glands showed tuberculous foci. The liver appeared fatty. There was no lardaceous disease of any organ. The other organs were healthy.

It is unfortunate that we have no bacteriological data as to the mother's milk or the original discharge from the left ear. It is therefore possible to suppose that the earliest lesion was in this situation and that no infection by milk took place. This, perhaps, would be supported by Dr. Allan Macfadyen's recent experiments on monkeys, which showed a tendency of human tubercle bacilli to produce intestinal ulcerations when ingested.[1] The calcareous nodule, though on the opposite side, might be considered to support this view. But it is at least possible that the original ear trouble was due to the Klebs-Löffler bacilli and I cannot help feeling that the chances that the mother's milk contained tubercle bacilli are great. If this was so it follows that the absence of a "primary" manifestation of tuberculosis in the abdomen does not necessarily exclude the possibility of infection by milk.

Bristol.

TREATMENT OF CHRONIC ULCER OF THE LEG OF LONG STANDING.

By HORATIO W. A. COWAN, M.B., C.M. ABERD.

AT the beginning of the present year I was called to a woman, aged 54 years, who had had a chronic sloughing ulcer for 22 years situated on the outside of the left leg, some ten inches long and three inches wide, with indurated edges and some thrombosis of the veins of the inside of the knee. Having first cleansed the ulcer with charcoal poultices for two days I applied wet buttercloth and then spread antiphlogistine over it after which cotton wool and a bandage were put on. This was done every day by the patient's friends for four months. The ulcer is now quite healed over and the induration is all gone. She is able to resume her ordinary housework. I publish this case in the hope that it might be useful to others as Unna's paste and all sorts of methods had been previously tried. I may say that I have no personal interest in antiphlogistine.

Fitzroy-square, W.

A Mirror
OF
HOSPITAL PRACTICE, BRITISH AND FOREIGN.

> Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv., Proœmium.

METROPOLITAN HOSPITAL.

A CASE OF BRONCHIECTASIS TREATED BY EXTERNAL DRAINAGE.

(Under the care of Dr. A. T. DAVIES.)

FOR the notes of the case we are indebted to Mr. A. Denham White, senior house physician.

The patient, a man, aged 32 years, was admitted into the Metropolitan Hospital on Jan. 14th, 1904. For ten days preceding his admission he had suffered from cough accompanied by profuse expectoration and gradually increasing pain in the right side. Two days before admission he became much worse. His breathing was more difficult and the expectoration became very offensive. Previously to the onset of this illness he had been a healthy man. There was no history indicative of phthisis affecting either himself or his family. When admitted the patient was extremely ill, the face was drawn, and the complexion was sallow. His temperature was 101° F., the pulse was 124, and the respirations were 36 to the minute. His breath was very foul and he brought up large quantities of muco-purulent material. Physical examination revealed the presence of extremely marked general bronchitis, in addition to which there was dulness on the right side extending in front from the third intercostal space and reaching the angle of the scapula behind. The breath sounds all over this area were very faint and assumed a bronchial character in the apex of the axilla. Tactile vocal vibrations, though present, were very feeble and voice sounds were very poorly conducted. The signs of bronchitis over the rest of the lung were very evident. There was no cardiac dilation and the urine was free from albumin. Microscopical examination of the expectoration failed to reveal the presence of tubercle bacilli either at the time of admission or during the subsequent course of the case. Large quantities of various pyogenic organisms were, however, seen. On the following day he was no better; he sat up in bed breathing 40 to the minute, and when moved for purposes of examination or for any other reason he was seized with a violent paroxysm of coughing which lasted for several minutes during which time he brought up large quantities of foul muco-purulent sputum. A definite diagnosis was not then arrived at, but it was thought that the patient was either expectorating a purulent pleural effusion or had a bronchiectasis. No operative treatment was then decided on but an antiseptic inhalation of creasote and carbolic acid was given together with stimulants.

During the next 48 hours the signs of effusion steadily diminished till by Jan 18th, four days after admission, the signs of fluid had disappeared, though he continued to expectorate a good deal of muco-pus and the bronchitis persisted. At this time the right side of the thorax was quite resonant, though the breath sounds remained weaker and vocal vibrations were feeble; the paroxysms of coughing were also less violent. The temperature ranged between 100° and 101° F. and the respirations between 36 and 40. On the 20th slight dulness was again noted at the right base behind and this slowly increased till by the 26th, the amount of purulent sputum increasing *pari passu*, the physical signs were as follows. At the right back there was dulness up to the angle of the scapula with very much weakened breath sounds. There was no bronchial breathing but whispered pectoriloquy could be

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[1] THE LANCET, Sept. 12th, 1903, p. 704.

[illegible] the fifth rib in the mid-axillary line being chosen and about one inch was removed. The lung was found to be pressed tightly against and adherent to the chest wall, entirely obliterating the pleural cavity. A needle was therefore passed into the lung for a distance of three inches and pus was again withdrawn. A large probe was then passed in the same direction into the lung and appeared to be in a large cavity in which the bent end of the probe [illegible] withdrawing the probe pus [illegible] of bleeding from the lung [illegible] the passage was undertaken till the following day, when the opening was enlarged with forceps and a small tube was inserted, nearly a pint of pus escaping. As a result of this treatment the patient's improvement was marked. Within 36 hours all muco-purulent expectorations had ceased, the respirations fell from 40 to 22 per minute, and the cough nearly ceased. Three days af[illegible]perature became normal and a [illegible] was seen in the pulse rate. Th[illegible] much better, the appetite returned, and the patient began to gain weight.

At this time iodine baths were being given for half an hour daily with the result that the discharge though remaining profuse was far less offensive. The improvement continued steadily until Feb. 13th when the temperature again began to rise, the expectoration of foul pus recommenced, and the wound simultaneously ceased to procure effective drainage. Accordingly on the 17th, three weeks after the first operation, a further portion of the same rib was excised under chloroform, the lung was freely incised with but little hæmorrhage resulting, and a full-size drainage-tube was inserted. The cavity appeared to be about two and a half inches in diameter and the walls were soft and spongy; several ounces of pus were evacuated. For the three days following the operation the symptoms improved, the temperature fell to normal, expectoration ceased, and the discharge became sweet. About this time the bronchitis began to clear up. Since then the improvement had continued, the discharge had slowly become less, and the cavity had diminished in size. As regards physical signs there remained dulness and extremely weak breath sounds below the level of the operation wound but the tactile vocal vibrations were increased. Above the wound the note was good and air entry and breath sounds were natural and the left lung was also natural. The patient made an uninterrupted recovery and was sent to a convalescent home on May 1st. A sinus about two inches long admitting a small probe still remained but there was no discharge and the patient when last seen on June 1st was in excellent health. He had no cough or pain and had regained his weight and strength. The only drugs given internally were the usual stimulants and expectorants, together with ichthyol in capsules containing ten grains three times a day. For permission to publish the above notes Mr. Denham White is indebted to the courtesy of Dr. Davies.

WEST NORFOLK AND LYNN HOSPITAL, KING'S LYNN.

A CASE OF LACERATION OF THE BRAIN BY CONTRECOUP.

(Under the care of Mr. H. O. Allinson.)

For the notes of the case we are indebted to Mr. Basil H. Pain, house surgeon.

On June 14th at 1 P.M. a man, aged 46 years, was taken to the West Norfolk and Lynn Hospital on an ambulance with a history of having fallen into the hold, some 15 feet deep, of a vessel unloading in the docks, and that he fell striking the back of his head on a steel plate. On removing the hood of the ambulance stretcher the man was seen lying on his left side, having recently vomited. His pulse was slow (56) and he resisted attempts to get a view of his pupils. He tried to get off the stretcher but did not speak. He was taken into the ward and an examination failed to reveal any signs of external injury. He was cold and collapsed when admitted but soon rallied. He vomited three times within the next two hours. A little [illegible] no paralysis could anywhere be discovered. The knee-jerks were well marked, possibly increased, and his arms and legs were held stiffly. On lightly stroking the plantar surfaces of the feet the legs were quickly withdrawn. There was no discharge from the nose or ears. The eyes were next examined but were unable to afford any assistance in diagnosis, for both showed extensive signs of old iritis, the pupils being eccentric, and in the left eye there was a large coloboma, apparently due to operative interference many years ago. Throughout the night he was very restless, a male attendant being required to keep him in bed. His pulse at 10 P.M. was 100, the respirations were 26, and the temperature was 99·6° F. The next morning a diffuse swelling was apparent over the region of the lambdoid suture. He was able to swallow fluids but never spoke. At 10 A.M. his pulse was 64, the respirations were 16, and the temperature was 99·6°. At 2 P.M. his temperature had risen to 102·4°, the pulse was 100, and the respirations were 24. At 3.30 P.M. he vomited and had great dyspnœa and cyanosis. Tongue forceps and gag being used, free air entry was obtained, but the respirations became slower and more laboured, and finally ceased, his heart continuing to beat about a minute after all respirations had ceased.

Necropsy.—A post-mortem examination revealed a small hæmatoma beneath the aponeurosis of the occipito-frontalis in the middle line in the region of the lambdoid suture. No depressed or fissured fracture could be made out on the surface of the skull, so the skull-cap was removed in the usual manner. The dura mater beneath was not torn and looked normal. The superior longitudinal sinus was empty. On stripping the dura mater off the brain, the blood-vessels running in all the sulci were seen to be much engorged and anteriorly the superior and middle frontal convolutions were reduced to pulp and mixed with blood. The base of the brain was free from injury and likewise the spinal cord. The ventricles of the brain appeared to be natural. An examina- [illegible] skull were clearly marked out by a dark line of extravasated blood in the sutures, suggesting at first glance a fractured base, but on comparing this line with the sutures on the [illegible] a mater from the [illegible] re was no fracture [illegible] found except the small bony projection between the two parietals mentioned above.

Remarks by Mr Pain.—The points of the case which I venture to think are interesting are: 1. The patient's pupils being eccentric and a coloboma present in the left eye they afforded no aid in diagnosis of the brain lesion. 2. A specimen of urine voided some ten hours before death reduced Fehling's solution. The urine was boiled with freshly prepared Fehling's solution. No reduction took place till cooling began, when the whole suddenly turned to yellow, then to red, and cupric oxide was deposited. Some reducing substance was evidently present in the urine, the specific gravity of which was 1014 and contained a trace of albumin. 3. The injury to the frontal lobes, by what I take to be injury due to contrecoup. For permission to publish these notes I am indebted to Mr. Allinson, under whose care the case was placed.

MELBOURNE HOSPITAL.

A CASE OF GENERAL PANCREATITIS WITH JAUNDICE; CHOLECYSTENTEROSTOMY; RECOVERY.

(Under the care of Dr. W. Moore.)

A married woman, aged 25 years, came under the care of Dr. Moore first in May, 1902, suffering from jaundice with a large tumour in the left hypochondrium and the epigastrium. The tumour was rounded, hard, non-fluctuating, and freely moveable, the percussion note over it was dull, and the dulness was continuous with that of the liver. The tumour was first noticed six years previously, when she had a sharp catching pain in the left side; since then the pain had been dull and more or less persistent. About the beginning of May, 1902, she had an attack of severe pain in the epigastrium and afterwards became markedly jaundiced.

She was then about two months pregnant. Hydatid of the liver was diagnosed and operation was advised. Operation was performed on May 13th. Dr. W. R. Boyd administered chloroform and Dr. A. S. Aitchison, under whose care the patient had been, assisted. A mid-line incision above the umbilicus at once revealed a hydatid cyst in the left lobe of the liver. The cyst contained some bile-stained fluid and a large number of daughter cysts, some whole, and some collapsed. The edges of the incision into the cyst were sutured to the upper part of the abdominal incision, the lower part of which was accurately sutured. A large rubber drain-tube was inserted into the cyst cavity. The patient made a somewhat slow recovery, not being able to leave hospital until June 29th, nearly seven weeks after the operation. A great many cysts drained away and the "adventitia" or fibrous outer wall of the sac also died and came away as a large slough. The jaundice gradually disappeared. The patient had a good deal of pain in the right side and vomited frequently, but before the end of July, 1902, she had quite recovered and was then in good health.

Dr. Moore was again asked to see the patient on March 10th, 1904. She was then very ill, was jaundiced, and was vomiting frequently and complaining of severe pain in the epigastrium. She stated that after her illness in May, 1902, she had remained very well until January, 1903, just before her confinement, when she had an attack of severe pain at the pit of the stomach immediately under the old scar. She was not jaundiced. She was confined on Jan. 15th and for the following six months her health was good. After that she began to suffer from attacks of vomiting and pain, with a feeling of fulness in the upper part of the abdomen, necessitating the loosening of her clothes about her waist. At first these attacks came on at intervals of about three months but gradually became more frequent until they occurred every week. After an attack she was always very tender in the centre of the upper part of the abdomen. For the last four weeks she has been continuously ill with pain in the epigastrium and vomiting and she also became jaundiced. Her temperature was 101° F. and at times slightly higher. She was extremely tender in the epigastrium, especially in the mid-line, so tender that it would have been quite impossible to define any tumour there unless it had been large. The abdomen was normal in appearance; the liver dulness was not increased and no enlargement (as of a hydatid) could be seen or felt. On the occasion of the first operation the cause of the jaundice was not at all clear. The hydatid was in the left lobe of the liver but it was very large and extended to the right side and so might have caused the jaundice by pressure, but this was very unlikely. There was no evidence of the cyst having leaked into the bile passages and so causing obstruction by the lodgment of a piece of membrane as occasionally happens. Dr. Moore was unable on account of the size and situation of the hydatid to examine the gall-bladder and ducts for calculi. There was no evidence of the existence of another hydatid. A gall-stone in the common duct seemed to be the most likely cause of the present pain and jaundice. It was decided to open the abdomen again.

Operation was performed on March 12th. Dr. Boyd gave the anæsthetic and Dr. Aitchison assisted as in the former operation. The abdomen was opened through the old scar by an incision from the tip of the ensiform cartilage to the umbilicus. The peritoneal cavity was easily entered as, contrary to expectations, there was only one small adherent band connecting the scar with the old hydatid, although the cyst had been drained for many weeks less than two years before. The white scar of the old hydatid was seen at the edge of the left lobe near the fissure. Lying just above the stomach a hard tumour stretching across the abdomen was felt at once. The cavity of the lesser omentum was opened and the tumour was carefully examined. It was obviously the pancreas which was enlarged throughout its whole extent and was uniformly hard and nodular; its head could be felt below the duodenum with an edge like the hard edge of a cirrhosed liver. A puncture was made near the head of the pancreas but nothing was found and there was no bleeding from the puncture. The gall-bladder and the bile-ducts were easily examined and no stone could be felt, neither could a stone be found at the orifice of the duct. The gall-bladder was considerably enlarged but was not tensely filled. A trocar was introduced into it and some thick greenish fluid withdrawn. The wall of the gall-bladder was thickened; its cut edge was almost too thick to permit of the use of the small Murphy's button which was now used to connect the gall-bladder with the hepatic flexure of the colon. A strip of iodoform gauze was placed near the communication between the gall-bladder and the bowel. The incision was closed with nine sutures of silver wire through the whole thickness of the abdominal wall and nine superficial horsehair sutures. The patient made an uninterrupted recovery. A portion of the gauze drain was removed on May 15th, another portion on the 17th, and the last piece on the 20th. A very little blood-stained serum came away along the drain. The sutures were removed on May 26th and the patient was allowed up on the 27th and went home on the 31st. The button was passed on the 26th. The jaundice lessened gradually from the time of the operation and within a fortnight had completely disappeared. There was no tenderness in the epigastrium; the patient expressed herself as feeling very well and she certainly looked well.

Remarks by Dr. MOORE.—The recovery of the patient was so rapid and so complete that one is inclined to doubt whether it could have been due entirely to the operation. Still her illness had been very persistent and was showing no signs of abatement. There can be little doubt but that the operation of cholecystenterostomy (draining the gall-bladder into the intestine) is to be preferred to that of cholecystostomy (draining the gall-bladder on to the surface).

Reviews and Notices of Books.

A Text-book of Physiology. By ISAAC OTT, A.M., M.D., Professor of Physiology in the [illegible] of Philadelphia. With 137 [illegible] F. A. Davis Company. 1904. Royal 8vo, pp. 563. Price $3 net.

THIS text-book is intended to furnish the students attending Dr. Ott's lectures delivered in the Medico-Chirurgical College of Philadelphia with an epitome of the subject of physiology. The size of the work precludes much originality in the treatment of this far-reaching branch of medical knowledge, for it is not possible in the compass of 600 pages to give more than the barest outline of even such fundamental divisions of physiology as the circulation, respiration, and digestion. The author has still further restricted the space at his disposal by introducing much histological detail which in this country is usually taught in a practical manner. This naturally leads to the omission of many facts with which the student should be familiar and which we presume are taught in the laboratory of the college; the senses of hearing and of vision together only occupy 33 pages and many of these are taken up with the anatomy of the internal ear and with the structure of the retina, the illustration accompanying the text in the latter instance being the obsolete one of Landois. Stereoscopic vision is not explained, though there is a diagram illustrating binocular vision. The best chapters are those devoted to the subjects of digestion (in which are embodied the results of Pawlow's experiments), the circulation, and animal heat, in which last section the author describes a useful calorimeter which he has devised and which is appropriate for experiments both on animals and on man. With this instrument he finds that of the entire amount of heat dissipated about 14 per cent. is thrown off from the lungs, an estimate that is probably correct. Dr. Ott was the first to demonstrate the presence of thermogenic centres in the corpora striata and in the optic thalami which act through the trophic centres in the anterior cornua. In support of this view he points out that intravenous injections of putrid blood and of a substance named β-tetrahydro-naphthalamin are followed by a great rise of temperature due to excitation of the thermogenic centres. If, however, a section be made behind the tuber cinereum no rise of temperature is to be observed. The lettering of the diagrams requires attention; for example, in Fig. 100, which represents a transverse section of the spinal cord, there are two "T. G.'s," one for Goll's tract and the other for Gowers's. The author does not always express himself correctly; for example, in speaking of the muscular structure of the heart he observes, "the muscular fibres of the auricles consist of two kinds," the context showing that he means that the fibres are arranged in two sets or run in two directions; and again, in discussing the functions of the fifth and seventh nerves, he states that "while the trigeminus is responsible for the sensory actions of the face the facial presides over the contraction of the facial muscles of expression." "The sensory actions of the face" is not, we submit, a happy term. The text-book, when supplemented with the observations and experiments of the lecturer, will doubtless supply the students of the Philadelphian College with sufficient physiological knowledge to enable them to understand the principles on which the practice of medicine is founded but in the future editions through which we trust the work may run we think that it might be expanded with advantage to include some parts of physiology which are very curtly treated or the author might leave the histological details to the anatomist and thus obtain more space for pure physiology.

Lyon's Medical Jurisprudence for India. Third edition. Revised by Lieutenant-Colonel L. A. WADDELL, I.M.S. Calcutta, Bombay, and London: Thacker, Spink, and Co. 1904. Pp. 704. Price R.18.

THE medical officer in India in search of guidance in matters connected with medical jurisprudence cannot complain to-day of any absence of authority on this subject, for he has been fully equipped with the great work of Gibbons, a work by Collis Barry of Bombay, and now the third edition of the well-known work of Brigade-Surgeon I. B. Lyon, C.I.E., I.M.S., has appeared. The author has been fortunate enough to secure the coöperation of Lieutenant-Colonel L. A. Waddell, C.I.E., I.M.S., an officer fully qualified for the task, inasmuch as he has been professor of chemistry, Medical College, Calcutta; chemical examiner to the Governments of Bengal and India; and examiner in medical Jurisprudence, University of Calcutta. This edition will be found on examination to merit fully the favourable review which it received on its first appearance.

The work opens with an introductory chapter on Medical Relations with the Law Courts. This section contains pretty nearly all that a medical witness need know and most useful hints for giving evidence are detailed. The difficulties of detecting crime in India medico-legally are pointed out, such as the rapid decomposition of the body, the facilities for concealing dead bodies or so disposing of them that they may escape discovery, the false evidence fabricated by the police, and false confession of fictitious murder. We next come to the subject of identification of the living and the dead. Here again peculiar difficulties occur in India, due to the heat or perhaps to the ravages of beasts and birds of prey. The data for estimating the age of the living are gathered from examination of the teeth, height and weight, and some minor signs, together with the extent of ossification. We may draw attention to a simple rule propounded by Major W. J. Buchanan, I.M.S., as the result of 28,000 observations on healthy adult prisoners—namely, taking five feet as equal to 100 pounds, three pounds in weight are added for every full inch above that—e.g., 5 feet 6 inches $= 100 + 3 \times 6 = 118$ pounds. The caste and conventional markings are clearly contrasted as they exist amongst Hindoos and Mahomedans. Lieutenant-Colonel H. H. R. Charles's researches into the differences between Oriental and European skeletons are detailed and the importance of a knowledge of them is manifest in the case of an inquiry as to the disappearance of a British soldier from cantonments when a skeleton is brought forward as that of the missing man. The section which is devoted to the examination of the dead enters fully into the signs of death; the time of onset of cadaveric changes is shown to occur, as was to be expected, considerably earlier in India than in Europe. The points especially to be noted in post-mortem examinations are given and a useful table of the weights of the various organs of adults of Bengal and Bihar is given. The author then passes on to the discussion of stains caused by blood and semen. Uhlenhuth's test for the discrimination of human blood is described; it is a specific test of great delicacy and has been found applicable to stains which had been dry for three months.

Part II. of the work discusses injuries by violence other than sexual, wounds, asphyxial deaths, burns and scalds, heat stroke, starvation, and sexual crimes and offences. The subject of unnatural sexual offences is one of the most frequent that is brought before the civil surgeon in India; unfortunately, there are no signs that can be said to be always present as indicating whether such an offence has been committed or not. A case is mentioned which gave not the slightest indication after 20 years' practice of the offence. Pregnancy in relation to crime and illegitimacy is the next subject treated of; then follow sections on matters pertaining to legitimacy and inheritance. The subject of fœticide is next dealt with; criminal abortion is undoubtedly very prevalent in India, being resorted to in order to get rid of the product of illicit intercourse or to avoid inconvenient additions to families. Hence this subject is one demanding full recognition. The various means by which abortion is produced are discussed and instances are given illustrating them. In the chapter on infanticide, a crime which is very frequent in India, the author considers the matters relating to the examination of the child, its degree of maturity, whether it lived after its birth, and the cause of the child's death. He finally details the facts concerning the examination of the alleged mother.

Lunacy in India is relatively infrequent in occurrence compared with its incidence in Europe. Thus the census of 1891 revealed a proportion only of 5 per 10,000, as against 33 per 10,000 of the population in England. The subject is considered under its various heads and the legal aspects are fully entered into. A very useful section is devoted to the diagnosis of feigned insanity. A chapter next follows on life assurance. The remaining portion of the treatise is occupied with the subject of poisoning. This section, comprising about two-fifths of the work, deals with the whole subject most exhaustively, nor is too large a portion devoted to it considering that in Bengal murder by poison occurs from three to four times more frequently than in England. Arsenic and opium are the two poisons most frequently chosen for taking human life in India and the reader will find both of them fully discussed. A series of appendices concludes the book and contains directions with regard to various medico-legal circumstances in which the Indian practitioner may want advice. The work, we may say in conclusion, forms a trustworthy guide to the subjects of which it treats.

Alcohol: its Place and Power in Legislation. By ROBINSON SOUTTAR, M.A., D.C.L. London: Hodder and Stoughton. 1904. Pp. 259. Price 3*s.* 6*d.*

THIS survey of the liquor question is based upon a dissertation which the author presented to the Faculty of Law at the University of Oxford when he was qualifying for the degree of D.C.L. Certain chapters of a non-legal character have been added and the law of licensing in Scotland has been brought up to date. The book is dedicated to the magistrates who in the matter of licensing have been constituted trustees for the common weal in the hope that a survey of matters relating to the liquor question, written in moderate

THE LANCET.

LONDON: SATURDAY, JULY 2, 1904.

Immunisation against Infection of Operation Wounds.

IN the never-ceasing warfare waged against the attacks of micro-organisms the weapons of war are many. Some of them are afforded by the body itself, for it is no passive spectator of the battle but a very valuable combatant. Indeed the exertions of the physician are chiefly directed to modifying or increasing its spontaneous efforts rather than to the addition of entirely new modes of fighting infection. The most obvious method of destroying organisms, the employment of ordinary chemical antiseptics, is only to a very slight extent available, for the microbes are in contact with the living tissues of the body and a substance capable of destroying the parasite will be only too likely to destroy the sheltering host. To a small extent, however, antiseptics can be used when they are specially antagonistic to some individual organism and it is not unlikely that the action of quinine in malaria is mainly at least to be attributed to its bactericidal action on the plasmodium. There are, however, other weapons, less obvious perhaps but more effective, which we are able now to wield with no small effect in certain cases of disease. The resisting power of the living body is no invention of the imagination. Against the human body, for instance, the attacks of many micro-organisms, fatal to some of the lower animals, are in vain. It is certain, too, that even when the body is not absolutely immune to an organism it can resist to some extent its onslaughts and this resisting power varies from day to day. Under some conditions it increases and under others it diminishes. For many years this resisting power has been recognised but it is only comparatively recently that it has been possible to measure it accurately and to gauge the effect of treatment on it. Still more recently have means been discovered by which we can to some degree at least increase or diminish this resistance of the body and it is in this power of modifying the defensive strength of the living body that, so far as we can see at present, the great hope of the future rests. On what does this immunity depend? There are several methods by which a body resists or controls the incursion of micro-organisms. Perhaps the most striking is phagocytosis, the process by which the white corpuscles, acting as the living amœbæ which they so closely resemble, envelop and destroy by digesting many microbes. This action of the leucocytes is certainly of importance but it is probable that METCHNIKOFF over-estimated its relative value, for the white corpuscles have still another mode of destroying bacteria which is of even greater effect. The leucocytes elaborate chemical substances which inhibit and destroy bacteria and the main resisting power of the body is probably attributable to this property. The alexins, as these chemical substances have been called, are especially prevalent where there is leucocytosis. After a pathogenic microbe has invaded the body still another antagonist tends to develop. Special antitoxins are formed which are antagonistic merely to the organism which has given rise to them. To the formation of antitoxins acquired immunity is due. Some of these means of combating bacteria are utilisable in disease but the surgeon has not been able to avail himself of their assistance to any great extent. Lately some progress has been made in this direction and a lecture by Professor MIKULICZ, delivered before the West London Medico-Chirurgical Society and published at p. 1 of our present issue, describes the present position of our knowledge of the subject, especially in relation to operation wounds.

During and after operations the danger of microbic infection is chiefly guarded against by strict attention to those methods and precautions which are associated with the name of LISTER. In some operations, however, as in those involving the stomach and intestines, the risk of infection of the peritoneum is exceptionally great and therefore surgeons would be glad if some additional aid could be afforded to them. It is clear, too, that it would be better if this protection could be given prophylactically rather than therapeutically, for peritoneal infection is very much more controllable at the outset than when it has widely developed. Specific immunisation is hardly practicable, for the variety of micro-organisms which may affect the peritoneum is very great, and therefore we must fall back on some other method. The double power of the leucocytes in phagocytosis and in the preparation of alexins suggests that if we can produce a general or even a local increase in the number of white corpuscles (or hyper-leucocytosis) we shall be able to repel the septic invasion. Professor MIKULICZ'S lecture dealt mainly with the various means which have been adopted in endeavouring to cause a hyper-leucocytosis and their success. It has been found that the injection of various substances into the bodies of animals, both subcutaneously and intraperitoneally, leads to a hyper-leucocytosis some seven hours later. The substances chiefly employed have been albumose, saline solution, and nucleic acid. This mode of producing hyper-leucocytosis is not likely to be of much value in treating disease which has already developed, for the body at the time of the application of the remedy is overpowered by the toxins of the invading microbes; it cannot respond to the stimulus of the injected material and a still further artificial hyper-leucocytosis is impossible. It is an entirely different question, however, whether this method cannot be employed prophylactically and much work has been done in this direction. An animal is injected with one of the immunising substances and then a few hours later, when the hyper-leucocytosis has developed, the peritoneum is infected with a culture of bacterium coli. It is found that the injection of the substances already mentioned can increase the resisting power so that in some cases 30 or 40 times the lethal dose of the bacterium coli may be injected harmlessly.

Nucleic acid seems to be the most powerful of these immunising substances and repeated injections are needed to produce the best effect. How far are these results applicable to man? The solution of nucleic acid which appears to be most useful is of the strength of 2 per cent. and one gramme per 75 kilogrammes of body weight was used in all cases. In man, as in the animals employed experimentally, a hyper-leucocytosis always appears to be preceded by a temporary decrease in the number of leucocytes. In man the maximum of hyper-leucocytosis occurs later than in animals and therefore Professor MIKULICZ gives the prophylactic injection 12 hours before the operation. No harmful manifestations follow the injection though there is a slight rise in temperature. As to the results, Professor MIKULICZ is of opinion that the cases treated in this way have given more favourable results than those obtained previously, not only in the proportion of cases which recovered but also in the progress of the individual cases. Of 45 laparotomies in which the abdominal cavity was exposed to infection of the contents of the stomach or the intestines or by some other infective secretion 38 recovered and in none of the seven fatal cases was peritonitis the cause of death. A valuable adjuvant to the subcutaneous injection of nucleic acid appears to be the flushing of the peritoneum with saline solution. While it is yet early to pronounce definitely on the value of this prophylactic hyper-leucocytosis we have facts enough before us to declare that the outlook of the process is exceedingly hopeful. We are justified in expecting that the developments which the future will reveal will enable us to guard against risks of septic infection even in cases where those risks now appear to be greatest.

The Site of St. George's Hospital.

A SPECIAL court of the governors of St. George's Hospital was held on June 21st at the Westminster Palace Hotel, as we reported in our columns last week, to receive the report of the committee appointed more than a year ago to consider the desirability of removing the hospital to another site. From the brief account of this meeting which we have given it will be seen that the report of the committee was on the whole not in favour of removal, although there was incorporated within it the report of a subcommittee which was mainly on the side of removal, while a minority report strongly signed also took this latter view. By the publication of these reports the public has become aware of the arguments relied upon by each side in a most interesting and important controversy. The site of St. George's Hospital is one of the grand sites of the world. There may be small spots in overcrowded business centres in the City of London and in the business end of New York city, for example, where ground is worth more per foot, but with the exception of such spots there are probably few pieces of land in the world more pecuniarily valuable than that occupied by St. George's Hospital. A position which commands the entrance to the Royal Palace in the capital of the Empire, which marks the commencement of the most fashionable thoroughfare in that capital, and which fronts the main ingress to its greatest pleasure park, has claims to value paramount to any save the most artificial commercial conditions. It leaps to the eye that such a site is worth a very large sum of money; it is estimated, indeed, to be worth from £12,000 to £15,000 per annum as ground rents. Consequently the popular view is that to maintain a hospital upon such a site is a reckless piece of extravagance, while the idea of building a new charitable institution in the same spot suggests lunacy.

Why not, say many people—and it is the most obvious thing to say—sell this extraordinarily valuable land and with the proceeds buy land in a cheaper market, build a brand new hospital and medical school, and pay the surplus of the purchase money to the credit of the charity? Against this view we have, first, the fact, perfectly well known but apparently ignored, that the whole of the ground on which the hospital stands does not belong to the hospital, so that the sale of the site is complicated by a dual ownership. The inconvenience of this is proved by the fact that although it has been an open secret for so long that a large money offer might be entertained no purchaser has come forward willing to give a price commensurate with the estimated value of the land. Secondly, the estimated price, something between £300,000 and £400,000, when looked carefully into, does not prove to be a superabundant sum for the purchase of land more or less in the neighbourhood of Hyde Park Corner and the erection thereon of a modern hospital and medical school. As for there being any surplus for an endowment it is difficult to see how anyone can be so sanguine as to hold the view. If a hospital is to be built upon the spacious lines that would insure it freedom from all criticism for, say, 50 years, and if it is to have connected with it a completely modern medical school fit for all present demands and fit also to be adapted to all demands that can be foreseen in the future—if all this, then the purchase price of the present site would barely suffice for the immediate needs of the new building. That is to say, that so far as the charity is concerned nothing in capital would be gained by the revolution. And the public also would gain nothing that can be ascertained for certain. As the hospital stands at present it occupies a place of extreme convenience to the public. It is accessible and in the immediate neighbourhood of the constant scene of accidents of all kinds. It serves a large poor population who do not live very far from its portals, and the police will testify to its inestimable value as a station for the treatment of emergencies. These considerations prevailed with the meeting which passed by a substantial majority a motion—

"That it is not desirable at the present time and under existing circumstances to move St. George's Hospital from its present site."

Mr. C. G. HEATHCOTE, the governor who proposed this motion and who was a member of the committee which had reported on the whole question, strengthened his case by a judicious speech, pointing out that the hospital would not obtain the great benefactions which it had received from the public in the past if it were placed in Chelsea or Fulham; that they would be giving up a position unequalled in any large town in the world for healthiness, convenience, and access without any certainty of obtaining compensating advantages. He also reminded the meeting that the hospital as it stands is not an ancient insanitary barrack but a thoroughly well-equipped and efficient place for dealing with disease. This is another point that seems to have escaped the critics of the policy of the governors of St. George's Hospital. There is no need for immediate and enormous building operations. There is much that should be done, and in all probability an early start will be made upon the buildings designed to occupy the site recently purchased from the Duke of Westminster immediately to the west of the existing structure, but until such a time as it is convenient to start rebuilding the present hospital can carry on its work adequately. Mr. R. H. C. Harrison, another governor who had also been upon the committee and who was one of the signatories of the minority report, fairly, even with moderation, advanced the view that the hospital ought to be moved to a less expensive site because, as trustees of a charity supported by voluntary contributions, the governors were not justified in remaining upon or rebuilding the hospital upon such valuable ground. His argument, as we have seen, in spite of its apparent force, is damaged by the actual facts of the case. The meeting saw this and voted in favour of not exchanging the substance for the shadow. The good of moving is problematical, the benefits to the charity and the public of remaining at "the corner" with which the hospital has been historically associated for so long are incontestable. The vote of the governors pledges them to use every endeavour to erect and to maintain upon their beautiful site a building adequate for the continuance of the splendid public services of the charity.

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The Introduction of Beri-beri into South Africa.

During last week public attention was aroused by the report that beri-beri had been introduced into South Africa and the matter received attention in both Houses of Parliament but without any light being thrown upon the subject. Further questions have been addressed to the Colonial Secretary this week but they found him for a long time without anything to say. No official information was received until Wednesday last confirming the report from private sources that a tropical disease new to the locality had broken out among the imported coolies It would be supposed that the knowledge that such an event had taken place would be enough to justify the reception of the intelligence with gravity in Parliament but when Dr. C. F. Hutchinson, the Member for Rye, who was the first to ask for information upon the subject, referred to beri-beri as a disease of an intensely infectious and dangerous character, the Colonial Secretary replied, as though dismissing the matter, that he had every confidence that the methods used for dealing with the importation of plague would be employed with success. Dr. Hutchinson called this answer unsatisfactory, as indeed it was, but his repeated statement that the matter was of urgent importance was received with laughter by many Members of the House, while the Deputy-Speaker ruled that the subject could not be discussed as it was already covered by resolutions of which notice had been given. The Marquis of Ripon then called attention to the matter in the House of Lords, as it appeared that the House of Commons was not in a position to debate the subject, when he elicited from the Foreign Secretary that in answer to a telegram sent by the Government to South Africa no official information had been received. Since then Mr. Lyttelton stated that he had sent three telegrams and had obtained no response. At last, however, Lord Milner replied and we now know that one transport ship bearing coolies arrived at Durban with 40 cases of beri-beri on board and that 25 cases have occurred on the Rand. The broad question of the importation of Chinese labour into South Africa is one on which we are not called upon to speak, but quite apart from all matters of political morality and commercial expediency is the enormously important consideration that the introduction of the Chinese coolie into the South African mines may lead to the establishment in our African colonies of loathsome pestilences. This apprehension has been felt by many medical men and expressed by some and the attitude of the House of Commons upon the matter cannot have much impressed our profession with the wisdom or the business methods of that assembly.

The real measure of the danger of beri-beri must not be exaggerated and when Dr. Hutchinson described the disease in the House of Commons as of an intensely infectious and dangerous character he would probably, had he been permitted, have qualified his words by expanding them. A great number of views have been held as to the causation of beri-beri, some of which evidently have no foundation in fact, and from the obscurity with which the subject has been thus surrounded there has arisen a too gloomy pathological view. Thus the late Dr. Kynsey considered that one form of the disease was due to the presence of ankylostoma and possibly of trichocephalus dispar, while Pekelharing, Winkler, and others claim to have discovered a special beri-beri bacterium. These things require substantiation. Two theories which would certainly seem to explain the phenomena of the disease are that connected with diet and that connected with locality. With regard to diet, food deficient in nitrogenous elements or fatty elements would seem to be responsible in some cases for beri-beri. Thus formerly the disease raged in the Japanese navy. In 1882 from 30 to 40 per cent. of the sickness in the service was due to this disease and the diet was exclusively rice In 1884 an improved dietary was introduced when the mortality from this affection fell to 137 per 1000. In 1885 a still greater improvement was effected and the death-rate then became only 6 per 1000. As to the causation by rice it was found with regard to the Javan prisons that in those in which white rice was eaten 36 gaols out of 51 were affected, whereas amongst those in which red uncleaned rice was consumed only one out of 37 gaols was attacked, the untreated seeds being richer in nitrogenous properties. Deficiency in fat has also been held to be a cause of beri-beri. At Ponto-Condor an epidemic suddenly ceased on a regimen of fat pork being given. This theory is attributed to Brémand and there is not much to support it. Sir Patrick Manson holds the affection to be a disease of locality. This view received striking confirmation from an epidemic reported on by Mr. E. A. O. Travers at the Pudoh gaol, Selangor. The gaol was occupied in January, 1895, previously to which all prisoners were confined in the old distant. Whilst in the latter none of the prisoners contracted the disease, although feeding on the same rice from the same source as that given them when in the new Pudoh gaol; but the outbreak occurred immediately after a change of location of the prisoners, the supply of rice remaining the same. The mortality being so high in this new goal, the prisoners affected were transferred to the old gaol in October, 1895, in the hope that the change of residence might prove beneficial. That this was so is shown by the following statistics. In September the percentage of deaths was 31·7; in October on the transfer it sank to 15·57; in November to 6·15; and in December to 4·25. The food was exactly the same in both gaols, in fact that for the old gaol was actually cooked in the Pudoh gaol. Again there were three other large institutions in Kuala Lampur, all within three miles of the Pudoh gaol; the rice supplied to them was the same as that supplied to the Pudoh gaol; yet throughout the six years during which the disease was endemic in the Pudoh gaol no outbreak of beri-beri occurred in these three institutions. There are, in fact, good grounds for supposing that an epidemic can be cut short by changing the locality of the patients and by improving the dietary.

From this it appears that the general danger to the health of the South African colonies from the accidental introduction of beri-beri into their midst is not very great but it seems to us an extraordinarily unfortunate matter that the Government should not have been prepared to treat Dr. HUTCHINSON'S original question seriously. We cannot believe that the rules of the House would have really prevented the matter receiving attention had the Government not desired to avoid the discussion of an awkward matter. The Government ought to have taken proper steps to obtain information, for surely there is an urgent form of telegraphic question that commands attention. And they ought not to allow the Colonial Secretary to say or to suggest that "it would probably be all right about beri-beri because they had done so well about plague"—which is a perfectly fair paraphrase of Mr. LYTTELTON'S original reply. Such questions as the importation of new diseases into our colonies should be discussed in a different spirit. If a debate had ensued upon Dr. HUTCHINSON'S question it would have been elicited that no fear of a general spread of beri-beri in South Africa need be entertained. By laughter, and by the appearance of shirking the matter, an impression has been created in the public mind of insecurity.

Annotations.

"Ne quid nimis"

THE PREVENTION OF PULMONARY TUBERCULOSIS.

THE continuous progress of the movement for the prevention of consumption and other forms of tuberculosis has recently been exemplified simultaneously in the north and the south of England. In another part of our present issue we describe the opening of the sanatorium at Heatherside in Surrey by the Prince and Princess of Wales on June 25th. Suitable cases from Brompton Hospital will here enjoy obtainable in the densely populated neighbourhood of the parent institution. Again, on June 29th the Society for the Prevention and Cure of Consumption in the County of Durham met in Sunderland and had under consideration the general committee's report on the work of the society since its formation in 1898. The sanatorium under the management of the society is at Horn Hall, Stanhope, and was opened in May, 1900. The report states that the experience of the last four years has proved that as good results can be obtained there by the open-air method as in the most landed health resorts in any country. In addition the society claims to have solved the difficult problem of bringing sanatorium treatment for themselves and their families within the reach of men belonging to bodies of workmen who make small regular contributions (threepence per quarter per man). These payments provide free beds for the use of subscribing workmen and the members of their families dependent on them to the full extent of the total subscriptions. Patients who do not belong to bodies of subscribing workmen, and can pay either the whole or a part of their maintenance, are charged two guineas a week, several local authorities subscribe for the purpose of being enabled to send patients from their districts, and subscriptions are of course collected from the public for the support of free patients. Among the special measures for the prevention of the disease adopted in various parts of the county of Durham it is stated (1) that in every district except the borough of South Shields suspected sputum is examined for tubercle bacilli free of charge on application to the health authorities; (2) that voluntary notification of cases of consumption is in force in the boroughs of Sunderland, Gateshead, and Jarrow; and (3) that many local authorities offer free disinfection of rooms vacated by consumptives. The society strongly urges the establishment of homes for advanced cases in the interest not only of the patients themselves but also of the public at large. The sanatorium has 30 beds and during the year 1902–03 applications were received from 210 patients, of whom only 108 could be admitted. The average stay of each patient was 14·5 weeks and the average gain in weight was 18·3 pounds. About half of them had tubercle of both lungs and many suffered also from laryngeal affections and heart disease. On admission 59 had consolidation only of the lungs and were classed as early cases. Of these, 16 (or 27 per cent) were sent out apparently cured, 40 (or 66 per cent.) were very much improved, and three were improved but unsuitable for further treatment. In 39 patients signs of advanced disease with loss of lung tissue were present on admission. These were classed as "cavity" cases; 26 of them left the sanatorium very much improved, seven were improved, and six were unsuitable for further treatment The records for the four years during which the institution has been open show that out of 146 early cases discharged 99 are still at work, 22 are at home, three have been readmitted, and 25 are dead; out of 122 advanced or "cavity" cases 35 are still at work, 31 are at home, two have been readmitted, and 56 are dead These results show the extreme importance of commencing treatment in the earliest possible stage as soon as the disease is recognisable and are decidedly encouraging so far as they go, but sanatoriums ought to have, and no doubt in time will have, a merit greatly in excess of their utility as curative institutions We refer to the immense power which they may exercise in educating the public to appreciate the advantages of ventilation, fresh air, and attention to a few simple rules of individual hygiene. When we consider that many hundreds of anxious sufferers travel far from their homes and pass the whole day reclining in open-air shelters it is impossible to avoid picturing to the mind how much these unfortunates would have been the gainers both in health and purse if they had in their youth acquired the habit of disregarding "draughts" and always admitting plenty of fresh air to their apartments.

A VISIT OF FRENCH MEDICAL MEN TO LONDON.

Sir William S. Church, Bart., K.C.B., President of the Royal College of Physicians of London, occupied the chair at the College, Pall Mall East, London, S.W., on June 23rd on the occasion of a meeting of representative members of the profession in order to consider the arrangements which should be made to receive a party of French physicians and surgeons who propose to visit London on Oct. 10th, 11th, and 12th. On the motion of Dr. Frederick T. Roberts, seconded by Mr. Thomas Wakley, Jun., an executive committee, with Sir William Broadbent, Bart., as chairman, containing representatives of the principal hospitals and laboratories in London which the French visitors might wish to see was appointed. Sir Thomas Barlow, Bart., and Dr. J. Dundas Grant were elected treasurers, the secretarial work being entrusted to Dr. Dawson Williams and Dr. W. Jobson Horne. A guarantee fund was formed and subscriptions were promised by those present.

PARKES MEMORIAL PRIZE.

THIS prize, (which is given triennially and consists of 75 guineas and a bronze medal), has been awarded to Major R. Caldwell, R.A.M.C., for the best essay sent in upon "The Prevention of Disease amongst Armies engaged in Active Operations in the Field, with special Reference to the Sanitary Organisation of a Field Force." The essays submitted by Major E. C. Freeman and Major F. Smith, D.S.O., also of the Royal Army Medical Corps, were highly commended by the assessors. The subject of the next prize is "On the Sanitary Requirements of Naval and Military Units in Peace and War; with Suggestions for Complete Schemes of Sanitary Organisation suitable for both the Navy and the Army." The competition is open to officers of the navy, army, and Indian medical services. Essays should be submitted to the secretary of the Parkes Memorial Fund, Royal Army Medical College, Examination Hall, Victoria Embankment, London, W.C., on or before Dec. 31st, 1906.

CEREBRO-SPINAL MENINGITIS OF THE EPIDEMIC TYPE.

DURING the past four or five years much attention has been given to the study of cerebro-spinal meningitis in the United States where this disease is often prevalent in epidemic form, the researches of Councilmann who investigated the Boston epidemic of over 100 cases, and of Osler who investigated the Baltimore epidemic, having served to increase the interest and importance of the matter. In the *Medical News* of New York of June 4th Professor Henry Koplik has published an account of his studies on 77 cases of epidemic cerebro-spinal meningitis carried out by him during the last five years. 37 of these were bacteriologically examined and found to be undoubted cases, cultures of the meningococcus intracellularis of Weichselbaum being obtained from the patients in every case. 35 of the other cases were found to be due to the tubercle bacillus, one each to the pneumococcus, the staphylococcus, and the streptococcus, and two to the influenza bacillus. 15 other cases of the epidemic form were also studied by Professor Koplik and from a careful collation of the records of all these cases and from others in literature the following conclusions were drawn. As regards age infants and children are the most liable to be affected. Thus the oldest patient was only 14 years of age, 77 per cent. of the patients were under four years, and 60 per cent. were under two years of age. "My own cases," adds Professor Koplik, "are of the primary meningitic form and include at least one case of so-called posterior basic meningitis." The clinical types of the disease were the ordinary and well-known ones but a few "malignant" cases occurred which were fatal within from 24 to 36 hours. These malignant cases were marked by vomiting and subcutaneous hæmorrhages in the face, the hands, and the body. In young infants the onset of cerebro-spinal meningitis was sudden, with general convulsions, high fever, and vomiting, the fever being of the intermittent or remittent type and lasting over four weeks. Rigidity of the neck, general muscular irritability, and incipient wasting began within a few days or a week of the onset. Babinski's reflex was found to be present in 77 per cent. of the cases of tuberculous meningitis, its constancy in this affection being attributed to a probable degeneration of the pyramidal tract fibres descending from the affected Rolandic area of the brain. Kernig's sign was difficult to elicit in children below the age of two years but all children above the age of two years who suffered from cerebro-spinal meningitis exhibited this sign. Hyperæsthesia of the skin and mental irritability were observed in all cases in recent epidemics but were not so universal in previous epidemics. The blood invariably exhibited leucocytic changes. The leucocytes were of the polynuclear type in every case and varied from 20,000 to 50,000 per cubic millimetre, the lowest count being (in one case) 12,000. The cerebro-spinal fluid drawn off by lumbar puncture showed in nine out of 13 cases a predominance of leucocytes, while four showed the normal proportion. The most frequent complications of the epidemic forms of the disease were *otitis media*, *herpes labialis*, and *purpura*. Treatment consisted of lumbar puncture "which was especially indicated in vigorous patients," the puncture being repeated after five days if symptoms recurred after (temporary) relief. From 30 to 40 cubic centimetres of fluid were as a rule withdrawn at the operation but in exceptional cases where there was much tension double the quantity was withdrawn. Hot baths were found useful for allaying rigors, sponging was employed to lower the pyrexia, while calomel and the alkaline iodides in full doses were also serviceable.

PROVIDENT MEDICAL DISPENSARIES.

AN interesting letter was read at the annual meeting of the Metropolitan Provident Medical Association held on June 28th at 67, Eaton-square, London, S.W., in which Sir William Broadbent, after regretting his inability to attend the meeting, stated that he had for many years past given close attention to the work of the Metropolitan Provident Medical Association in providing good medical treatment for the working classes, including attendance at home. In his opinion the establishment of provident dispensaries afforded the true solution of the difficulties attending the securing of good and efficient medical advice for the self-respecting working classes. According to the annual report of the association, which was adopted by the meeting, at the end of 1903 there were 12,861 cards of membership—family and single—representing about 30,000 persons. The payments made by these provident members in small regular fees amounted to £5836. In his letter Sir William Broadbent observed that the club system of providing medical treatment by way of insurance was open to serious abuse on both sides and he considered that it would be a very good thing if the great benefit societies could affiliate themselves with the Provident Medical Association. One of the objects of the Provident Medical Association is to relieve the overcrowded hospital out-patient departments by a system of coöperation and on that point the opinion of

Sir William Broadbent, as expressed in his letter, was that as regards the working classes in hospitals, while working men and their families ought to have a first claim on hospitals as in-patients where operations were required and in cases of very serious illness, he thought it was sad when they were compelled to attend out-patient departments with the waste of time which that involved and the association and contact with the filthy and vicious people who so often crowded the waiting rooms. One of the important features of the association is coöperation with the medical profession generally, and on that point Sir William Broadbent wrote that there ought to be an organic connexion between the provident dispensary of any locality and the neighbouring hospital by which a member of the dispensary should be entitled to prior consideration at the hospital. In the latter part of his communication Sir William Broadbent affirmed that he was quite sure that the physicians and surgeons would agree to this and he believed that most of them would be ready to see provident dispensary patients at home in consultation with the medical officer in attendance at reduced fees. A motion was unanimously passed at the meeting to establish more provident dispensaries and all the speakers seemed anxious to let everyone know that the methods of the Metropolitan Provident Medical Association did not tend to pauperise the population.

THE BIRTHDAY HONOURS.

THE list of birthday honours does not include the names of any large number of medical men or of men prominent in the scientific world. Professor James Dewar receives recognition for his important work with regard to the liquefaction and consolidation of air and hydrogen by obtaining a knighthood. Three medical men have been knighted—Dr. T. Stevenson, Dr. C. Holman, and Dr. Kendal Franks, C.B. Sir Thomas Stevenson, scientific analyst to the Home Office, became an M.D. of the University of London in 1864, and in addition to his Government appointment at the Home Office is a lecturer on medical jurisprudence at Guy's Hospital, examiner in forensic medicine at the University of Birmingham, and analyst to several counties and boroughs. His excellent contributions to the standard literature of forensic medicine and hygiene are known to all our readers. Every member of the medical profession will hail with hearty satisfaction the announcement that a knighthood has been conferred upon Dr. Holman who has worked so hard in connexion with the beneficent and educational work of Epsom College as treasurer and vice-president. Sir Constantine Holman, who received his medical education at Guy's Hospital and at the University of Edinburgh, was for many years in practice at Reigate and an outline of his professional career appeared recently in our columns on the occasion of the presentation to him by the medical profession of a testimonial. Sir Kendal Franks received his medical education at Dublin and at Leipsic. He is an M.D. of the University of Dublin and a Fellow and ex-vice-president of the Royal College of Surgeons in Ireland. He has held many important appointments and is at the present time Principal Medical Officer to H.M. Forces at Capetown. An interesting feature of the honours list this year is afforded by the decorations awarded in commemoration of the jubilee of the Crimean war. Among the recipients are Surgeon Thomas Ligertwood (retired pay), late physician and surgeon to the Royal Hospital, Chelsea, who is made a Companion of the Bath in the Military Division. He served at Alma, Inkerman, and Sebastopol. Among the new Knight Commanders of the same Order are Deputy Surgeon-General James Howard Thornton, I.M.S., C.B., and Surgeon-General Edmond Townsend, A.M.S., C.B., C.M.G., both of whom are promoted from the Companionship of the Bath. Surgeon-General William James Fawcett, A.M.S., has been made a Companion of the Bath in the Military Division, and Hon. Colonel John Edward Squire, lately commanding the Home District of the Royal Army Medical Corps (London Companies) Volunteers, a Companion of the Bath in the Civil Division. Mr. Bolton Glanvill Corney, M.R.C.S. Eng., Chief Medical Officer of the Colonial Government at Fiji, has been appointed a Companion of the Imperial Service Order. To each of the recipients of these honours we offer in the name of the medical profession hearty congratulations.

THE SANITARY INSTITUTE.

WE may remind our readers that the twenty-second congress of the Sanitary Institute will be held at Glasgow from July 25th to 30th under the presidency of the Right Hon. Lord Blythswood, Lord Lieutenant of Renfrewshire. The list of presidents of the various sections has already been published in our columns.[1] The arrangements which have been made for the convenience of intending visitors to the congress appear to be all that could be desired and we have received from the secretary (Mr. E. White Wallis) a number of documents, including the preliminary programme, setting forth the various papers that will be read at the congress, particulars of excursions and social functions, the method of obtaining cheap railway tickets to Glasgow and other places in connexion with the congress, and a list of hotels and apartments, giving the tariff, and so forth. Full particulars can be obtained from the Parkes Museum, Margaret-street, London, W., and from the local offices, City Chambers, Glasgow. Since the Sanitary Institute was formed in 1876 it has done much good work in educating the public in sanitary matters. The Parkes' Museum of Hygiene, which was instituted as a permanent memorial of Dr. Alexander Parkes, the first professor of hygiene at Netley, has also become a powerful auxiliary to the educational influence of the institute.

COLLIERY CONTRACT PRACTICE IN NORTHUMBERLAND.

PRIOR to the formation of the Northumberland and Newcastle Medical Association the medical officers to the miners in Northumberland were paid by the miners 6*d.* a fortnight per family for medical attendance, the payment being supplemented by small fees with regard to grown-up sons or lodgers. This rate of pay continued for 60 years until the association was formed, when a movement was started which proved successful to raise the fees to a minimum of 9*d.* per fortnight. The Miners' Association, we are informed, has now decided to take steps to bring about a reduction of 50 per cent. in these fees on the grounds that since the medical rates have been raised wages have fallen gravely. If the wages of the miners have fallen below a fair figure we are ready heartily to support any movement for raising them again, but the contention that the pay of the medical men should therefore be reduced is quite illogical. The pay of the medical men had to be raised (1) because the cost of medical education is double what it used to be when 6*d.* per fortnight per family was fixed as a fair figure; (2) because the medical curriculum is now five years instead of three years; (3) because unqualified assistants are no longer permitted by the General Medical Council to assist practitioners; and (4) because the modern appliances of medicine are very expensive to buy. These are the circumstances that make it impossible for medical men in justice to themselves to put up with the old standard of payment and we trust that no member of the medical profession will accept any appointment of any description in the county of Northumberland without first inquiring from

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[1] THE LANCET, Feb. 13th, 1904, p. 451.

Mr. Garforth Drury, 95, Pilgrim-street, Newcastle-upon-Tyne, secretary of the Northumberland and Newcastle Medical Association, as to the circumstances of the appointment. Dr. A. Cox of Gateshead, secretary of the North of England branch of the British Medical Association, will also give information on the subject to intending applicants.

THE JAPANESE AS CHEMISTS.

PROBABLY no Eastern nation is more strongly represented than are the Japanese in the English annals of science and more particularly in literature on chemistry. They possess an undoubtedly strong faculty for original research and they combine this faculty with a sharp-sightedness as to the possibilities of practical application of the fruits of research. The Japanese chemist, in fact, unites the power of originality of the English chemist and the practical intuition of the German. At the University of Tokyo practical study is very much favoured and splendid facilities for work are provided in the laboratories and workshops. There are several distinguished Japanese chemists who are Fellows of the English Chemical Society and who were elected to the Fellowship on account of the excellence of their contributions to original science. Many elaborate papers involving long and patient laboratory investigation are printed in full in the Transactions of the society. The Japanese chemists discuss with a freedom which astonishes the Western chemist all the modern abstruse theories bearing upon the atomic theory, the constitution of matter, the theory of dissociation, and so forth. They write powerful dissertations on the views advanced by such esteemed thinkers as Ostwald, Arrhenius, Van 'tHoff, Kelvin, Thomson, Lodge, Crookes, Ramsay, and others and have offered valuable criticisms on the methods of systematising and compiling atomic weights adopted by Western chemists. Chemistry, of course, is a powerful weapon in war and there can be little doubt that amongst other things which have so far contributed to Japanese successes is a sound knowledge of explosives, their composition, action, and behaviour under a variety of conditions. When there is no longer any need for the implements of battle, and may that soon be, we may be pretty sure that the same subtle insight which is so marked a feature of the Japanese intellect will turn with equal success to the application of science to peaceful pursuits.

THE EPILEPTIC COLONY AT CHALFONT.

THE life of the epileptic is one of involuntary idleness while his existence in the community at large is a source of distress and danger to others. The epileptic farm-colony at Chalfont St. Peter, which has been in existence for ten years, provides for these sufferers a home where they can be taught under proper supervision to follow the avocations of ordinary life, to engage in industries of various kinds, and to take part in healthy outdoor games and amusements. The eleventh annual report of the colony, to which we alluded briefly last week, states that "several homes have already [lately] been opened ...... but the existing accommodation is nevertheless utterly inadequate to meet the demand for admission and funds are most urgently needed for the building of additional homes." Annual subscriptions or donations may either be given for the general purposes of the society or allocated to the building and extension fund or the maintenance fund. A contribution of £200 will reserve a bed for eligible patients nominated by the donor. A contribution of £4000 will provide and equip a home for 24 patients and will give priority of admission to a corresponding number of eligible candidates belonging to any county or other district in which the donor may be specially interested. A scheme had been prepared which if carried into effect would have resulted in the building by the London School Board of homes for epileptic children (under the jurisdiction of the London School Board) in contiguity to the Chalfont [illegible] of these homes to the National Society for Employment of Epileptics which administers the Chalfont colony, a fixed weekly sum being arranged to be paid for the maintenance of each child. The number of children that would eventually have come within the scheme was estimated to be about 150. The scheme was, however, subject to the sanction of the Board of Education and on the matter being referred to it by the London School Board the former, without in any way disapproving of the scheme, expressed the opinion that in view of the approaching transfer of the functions of the School Board to the London County Council the consideration of the matter ought to be postponed. The clauses in the Education Act (1899) which stood in the way of the colony accepting the care of these children being removed by a new measure promoted by the National Society, and passed in Parliament recently, this work is now possible. At the beginning of the year 1903 there were in residence at Chalfont 114 male and 56 female colonists. During the year 22 males and 22 females were admitted and 22 males and 21 females were discharged, leaving in residence at the end of the year a total of 171. Besides the regular colonists there were received during the year ten convalescent or temporary cases. The institution has been remarkably free from scarlet fever, diphtheria, and small-pox, though outbreaks of these diseases occurred in the immediate vicinity of the colony. Only a single case of scarlet fever occurred among the colonists and the patient was at once isolated and treated with satisfactory results. Anyone interested in promoting the welfare of epileptics and desirous of any information conducive to that purpose should communicate with the secretary of the National Society for Employment of Epileptics, 12, Buckingham-street, Strand, W.C., who will always be happy to give any information and assistance in his power.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

ON Thursday next, July 7th, the counting of the votes for the election of three members of the Council of the Royal College of Surgeons of England will take place. By the regulations of the College six Fellows unconnected with the Council must be present. On several occasions much delay has occurred in consequence of the difficulty of making up this number; it is therefore hoped that any Fellows who can spare the time will attend at the College on Thursday at 2 P.M. so as to enable the counting of the votes to take place. Attendance is necessary for a few minutes only and as the additions to the museum will be on view the time required may be well spent.

THE COMMERCIAL PRODUCTION OF VACCINE MATERIAL.

IN an article on Vaccine and Vaccination published in the April number of the *Bulletin of the Johns Hopkins Hospital* Dr. George Dock of Ann Arbor, Michigan, when describing the systematic cultivation of vaccine material by inoculating calves, says that the "seed" vaccine used in the inoculations is of various kinds. Sometimes it is bovine virus selected with care from well-developed vesicles and of tested bacterial purity. Sometimes it is selected humanised vaccine lymph and sometimes it is material derived more or less remotely from human variola. Often the manufacturers either do not know or are unwilling to state the source and nature of the "seed" and misrepresentation has occasionally occurred. With regard to the quality of the product he remarks that commercial vaccine virus has an unnecessarily large bacterial contamination and these organisms though usually harmless may sometimes be pathogenic, as in the remarkable development of tetanus following vaccination in several parts of the United States in the end of 1901.[1] On the subject of the essential efficacy of the vaccine material produced by various manufacturers Dr. Dock says :—

[illegible]

improvement.

THE CONGRESS OF THE ROYAL INSTITUTE OF PUBLIC HEALTH AT FOLKESTONE.

THE Congress of the Royal Institute of Public Health will be held at Folkestone this year from July 21st to 26th under the presidency of the Right Hon. the Earl of Radnor. In the sections of Tropical Medicine and the Early Physical Training of the Navy, Army, and Imperial Forces, of which Dr. W. J. Simpson and General Sir William Stirling, K.C.B., are respectively the presidents, papers of particular interest at the present moment will be read and discussed by Mr. James Cantlie, Colonel A. Crombie, C.B., I.M.S. (retired), Brigade-Surgeon-Lieutenant-Colonel W. Hill-Climo, A.M.S. (retired), Surgeon-General G. J. H. Evatt, C.B., A.M.S. (retired), and Brigade-Surgeon-Lieutenant-Colonel James Turton, A.M.R. In the section of Comparative Pathology, Bacteriology, and Chemistry Dr. Edward E. Klein, F.R.S., is the president, the title of his address being "The Aim and Scope of Bacteriological Analyses of Water and Shell-fish with Reference to Sewage Pollution." In connexion with this congress we are in a position to state that an endeavour will be made to discuss fully the question of the Jones Sanatoriums in accordance with the suggestion of our Special Sanitary Commissioner in his articles on the Folkestone Public Health Congress and the Sandgate Scandal, the concluding one of which will be found at p. 47 of our present issue.

THE MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.

THE sixty-third annual meeting of this association will be held on July 21st and 22nd at 11, Chandos-street, Cavendish-square, W., under the presidency of Dr. R. Percy Smith. At 9.30 A.M. on July 21st a council meeting will be held and at 11 A.M. officers of the association and members of council will be elected and other private business transacted. At 2 P.M. on the same day the President will deliver his address, after which Dr. G. E. Shuttleworth will read a paper on the Education and Treatment of Young Epileptics and Dr. C. Hubert Bond a paper on a Plea for the Closer Study of the Body Weight and its Relation to Mental Disease. On July 22nd at 10 A.M. papers will be read by Dr. A. W. Campbell and Dr. John Turner dealing respectively with Further Histological Studies in the Localisation of Cerebral Function and the Finer Anatomy of the Nervous System with Special Reference to the Doctrine of Continuity. The Psychology of Hallucinations is the title of a paper which will be read by Dr. W. H. B. Stoddart. [illegible] will be read by Dr. G. M. Robertson, Dr. J. Milson Rhodes, and Mr. J. Carswell at 2 P.M. On the evening of July 21st the annual dinner will be held at the Whitehall Rooms of the Hôtel Métropole, and on July 22nd, from 4 P.M. to 7 P.M., the President and Mrs. Percy Smith invite members of the association to a garden party at the Botanical Gardens, Regent's-park, N.W. Tickets for the dinner can be obtained from the honorary secretary, Dr. Robert Jones, price one guinea, including wine.

THE WEST LONDON HOSPITAL AND POST-GRADUATE COLLEGE.

THE annual dinner of the West London Hospital and Post-Graduate College was held at the Trocadéro Restaurant, Piccadilly-circus, on June 25th, Dr. J. Barry Ball occupying the chair. The dinner was well attended by the staff of the hospital and college and by post-graduate students. There were many guests, including Professor von Mikulicz of Breslau, Sir Felix Semon, Dr. F. de Havilland Hall, and Fleet-Surgeon G. Welch, R.N. During the evening various toasts were given and enthusiastically received, among them that of "The West London Hospital and the Post-Graduate College," which was responded to by the Dean, Mr. L. A. Bidwell, and that of "The Visitors," for whom Professor von Mikulicz replied. An exhibition of sleight of hand was given by Mr. Charles Bertram.

CHANGES IN THE INTERCOSTAL MUSCLES AND DIAPHRAGM IN INFECTIONS OF THE LUNG AND PLEURA.

IN the *American Journal of the Medical Sciences* for May Dr. W. M. L. Coplin has published an important paper on Changes in the Intercostal Muscles and Diaphragm in Infections of the Lung and Pleura—a subject which seems to have received little attention. Rosenbach speaks of atrophy of, and pains in, the thoracic muscles in pleurisy. Rohrer has shown that in pneumonia and pleurisy an interstitial myositis of the part of the diaphragm adjacent to the affected area occurs.[1] Dr. Coplin has studied the condition of the intercostal muscles in seven cases—two of croupous pneumonia with plastic pleurisy, two of tuberculosis of the pleura, two of pneumococcic pleurisy, and one of empyema. In the two cases of croupous pneumonia the diaphragm was also examined. Marked granular changes were found in the muscular fibres, apparently identical with the cloudy swelling which occurs in infectious diseases. Dr. Coplin therefore thinks that this change is only part of an alteration of the general musculature due to toxæmia. But there were also changes probably due to extension of the inflammation from the adjacent serosa. The muscle fibres were dissociated and separated by a granular acidophilic deposit (indicating œdema). Groups of fibres showed hyaline degeneration. What appeared to be a more advanced stage of the changes just described consisted in leucocytic infiltration of the muscle and necrosis of the fibre. In this stage pneumococci and other organisms were found in the muscles. Fibrin was abundantly present. Specimens showing a further stage and the ultimate result in cases of recovery could not be obtained. Evidence of suppuration was usually absent but no doubt small necrotic areas infiltrated with leucocytes were really microscopic abscesses. The general pathology of myositis points to the inference that with subsidence of the infection the necrotic muscular tissue would be removed by phagocytes and that some fibrosis would result. The following case is an example. A man, aged 22 years, had left-sided pleurisy of six years' duration which terminated in empyema. On June 9th, 1903, three quarts of pus were removed by aspiration. A week later two inches of the seventh rib were excised and the cavity was drained. The patient improved and left the hospital. He returned on Oct. 26th with the heart still displaced to the right and the left chest deficient in resonance and the respiratory sounds diminished in the upper half and absent in the lower. Professor Keen performed thoracic resection, removing the greatly thickened pleura with the chest wall from the third to the seventh rib inclusive. On Dec. 2nd there were signs of œdema of the lung and death occurred two days later. A necropsy was not obtained. Microscopic examination of sections of the soft parts removed showed in the majority only fibrous tissue most of which was in the early stages of formation though some of it was dense. There were also granulation tissue and muscle which had undergone considerable changes—atrophy, fatty degeneration, vacuolisation, and fragmentation. The clinical importance of such changes in the intercostal muscles is evident, for they may be a factor in the dyspnœa of diseases of the chest.

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[1] Maryland Medical Journal, September, 1902.

NORTH INDIA SCHOOL OF MEDICINE FOR NATIVE CHRISTIAN WOMEN.

WE have received from the secretary of the Medical Missionary Association, a pamphlet[1] descriptive of the North India School of Medicine for Native Christian Women at Ludhiana in the Punjab. The school was started nine years ago and at present has 35 students in training—19 as hospital assistants, six as dispensers, and ten as nurses; there are also ten midwives. In connexion with the school there are a dispensary and a hospital of 70 beds where everything is done to satisfy the ceremonial requirements of high-caste patients. As no man is allowed inside the hospital five small zenana or purdah homes of three rooms each have been built with access to the street so that the patients may see their husbands or male relatives without disturbing other purdah women who must never be seen by strange men. The school is governed by a committee in India which has upon it representatives of several different societies; there are also auxiliary home committees in London, Edinburgh, and Dublin. One of its great needs is an increase in the teaching staff and as will be seen in our advertisement columns applications from qualified medical women are invited. The Government has granted 25,000 rupees for the completion of the hospital and dispensary buildings and the University of Lahore has promised to consider its affiliation as soon as certain requirements are fulfilled, one of which is that there shall be eight fully qualified practitioners (female) on the teaching staff.

ANTITYPHOID inoculation has been introduced into the German Army in view of the favourable results obtained by the application of Dr. A. E. Wright's method. The troops proceeding to South-West Africa in connexion with the military operations which are being conducted there have, we believe, been made the subject of treatment.

THE Revaccination Bill, 1904, has passed its second reading and the committee stage in the House of Lords. Lord Lansdowne, quoting from Dr. Bruce Low's recent report, pointed out that in the last 12 years there had been in Germany only 667 deaths from small-pox in a population of more than 56,000,000.

THE council of the Society of Arts has awarded the silver medal of the society to Dr. Robert Jones for a paper upon Physical and Mental Degeneration which was published in the journal of the society of March 4th.

THE King has been pleased to approve of the appointment of Mr. Otho Galgey, M.R.C.P. Irel. (colonial assistant surgeon), to be an official member of the Legislative Council of the Island of Saint Lucia.

Sir John Wolfe Barry will distribute the certificates and prizes at King's College, London, on Wednesday afternoon, July 6th, at 3 P.M.

H.R.H. the Prince of Wales has consented to become Patron of the Royal Meteorological Society.

THE LAST SCHOOL BOARD REPORT.

(Concluded from p. 1815 of THE LANCET *of June 25th, 1904.)*

WE now come to that portion of the report which treats of the measures adopted under the direction of the School Board for checking the dissemination of diphtheria. This section of the report is written by Dr. C. J. Thomas who has devoted much attention to work of this nature. According to his experience it appears that diphtheria does not tend to spread to any great extent in classes composed of children under the age of four or above the age of seven years. In babies' classes—i.e., amongst children at ages from three to four years—diphtheria has not been found to spread in the London board schools. It is among children between their fourth and seventh birthdays that the greatest danger of school-spread is to be feared. Dr. Thomas suggests the following interesting explanation of this peculiar age incidence. It is well known, he says, that the blood of adults and older children in this country contains an appreciable quantity of antitoxin. It is equally certain that infants have a relative immunity against the disease; children between four and seven years are therefore in the intermediate stage in which, while they have lost the protection acquired at birth from placental circulation, they have not yet acquired immunity by the self-production of antitoxin that is set up by sub-pathogenic doses of diphtheria bacilli.

In the earlier part of last year a laboratory was fitted up and work therein was commenced in June, the experience gained during 1902 and 1903—particularly with regard to the Gordon House Home and Ancona-road outbreaks—having shown that greater facility for bacteriological investigation was essential in order that diphtheria prevalence in schools should be adequately dealt with. The methods adopted at the laboratory are very instructive. They do not, however, readily admit of being summarised and in view of their importance we give the description in Dr. Thomas's own words: "The diphtheria returns from all districts were kept under continuous observation, and as soon as there was any suspicion of school influence, as shown by the attack-rate in any school department or class, a visit was made. The children in the affected classes were examined, and the attendance registers were carefully looked over. All children giving clinical signs of mild diphtheria—e.g., nasal discharge, enlarged cervical glands, undue pallor, ear discharge; children whose attendance record showed a suspicious absence; children whose history was in any way doubtful, e.g., coming from a recently infected house, having returned from hospital, or having recently appeared out of sorts—all such children were examined bacteriologically. This was carried out by transferring a portion of the mucus from the throat or nose by a platinum loop straight on to a sterile serum tube which was afterwards grown at 98° F. for 15 hours. The culture was then examined and any case showing Klebs-Löffler bacilli was immediately excluded from school by telegram, and notified to the local medical officer of health."

As compared with the usual method of "swabbing" with cotton wool the advantages of direct inoculation of serum tubes as now described are: first, that growths are obtained in a larger proportion of cases; secondly, that a more delicate manipulation is secured; thirdly, that the objection to a double transference of material is surmounted;

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[1] Published by Messrs. Morgan and Scott, 12, Paternoster-buildings, London, E.C.

and lastly, that the expense and trouble of providing sterile swabs are avoided. For purposes of exclusion the tests relied on as conclusive were: (1) the morphological characters (in every case); and (2) the Neisser staining reaction. Other tests, such as (3) acid production; (4) virulence to guinea-pigs; or (5) "unpremeditated virulence experiments" are inadmissible, save *for confirmatory results, owing to the time* necessary for their application. As the children remain at school during the making of the test rapidity of action is obviously a necessity.

As a result of rigorously applying the foregoing method it is satisfactory to find that from August, 1903, to March, 1904, it was not necessary to close any class in a London board school on account of diphtheria and, further, that the spread of diphtheria in the schools of the Board has been arrested. From the fact that out of 758 cases examined only 7·6 per cent. showed diphtheria bacilli it is clear that the experience in London board schools does not confirm the statements sometimes made respecting the prevalence of diphtheria bacilli among the population. In this connexion Dr. Thomas quotes the experiments of Hewlett and Murray who, basing their conclusions on investigations of the throats of children admitted to the Victoria Hospital, argued that 15 per cent., or one in every seven of normal children in the general community, have diphtheria bacilli in their throats.

In London board schools, however, Dr. Thomas has found that only one in 13 children have diphtheria bacilli, even in affected classes where the children must be looked upon as possible "contacts"; amongst "non-contacts" the prevalence must be very much less. And here it is interesting to note the conditions at Gordon House Home. At this residential school a severe outbreak of diphtheria occurred in 1902 which terminated in December of that year. The throats of all the children were systematically swabbed and none of them were allowed to return to the home until they were free from bacilli. In December, 1903, a year after the ending of the outbreak, all the girls' throats were again swabbed with the result that only two were found to be harbouring diphtheria bacilli out of 64 present in the house, the proportion being 3·1 per cent. These bacilli were, moreover, attenuated and non-virulent to guinea-pigs.

A number of bacilli morphologically simulating the organisms of Klebs-Löffler are found in the tonsillar and nasal discharges of a large proportion of London children. These are styled pseudo-diphtheria bacilli and are altogether non-virulent. The biological position of the pseudo-diphtheria bacillus and its relation to diphtheria are not settled. It is regarded as probable that in many of the earlier recorded researches these bacilli were not differentiated and that consequently an exaggerated estimate of the frequency of the diphtheria bacillus has been made. Dr. Thomas tells us that out of 758 examinations the pseudo-diphtheria organism has been identified in 211 cases, or 28 per cent. of the whole. Owing to doubts respecting the relationship of this pseudo-bacillus [illegible] ren was discontinued and it was found that the presence of these organisms might safely be ignored. Nevertheless, we are assured that a certain relationship does exist between the two organisms and—what is of more importance—that where true diphtheria is most prevalent, there are found in greater abundance the pseudo-diphtheria bacilli also. It is probable that the pseudo-organism is totally distinct from the true diphtheria bacillus but that it is a member of the same group, affected by the same conditions and spreading in a similar way from child to child. Its general presence therefore may be useful as indicating the directions in which diphtheria, if introduced, would be likely to spread. It further appears to be probable that the pseudo-bacillus is capable of causing mild sore-throat and in many instances children suffering from sore-throat during a diphtheria outbreak show in bacteriological tonsillar cultures no trace of the Klebs-Löffler bacillus but an almost pure culture of the pseudo-organism. Speaking of the mode in which diphtheria is spread through school attendance Dr. Thomas expresses the opinion that diphtheria is a personal disease and spreads to any serious extent only by personal contact. The common use of slates and of drinking cups may conceivably be a danger but his experience has shown that direct personal transmission is the chief cause and almost the only one to be considered practically. Nevertheless, in order to be on the safe side the use of slates has been discontinued by the London School Board.

Dr. Thomas divides the children who spread diphtheria into two groups: Group A, perfectly healthy children who have not had diphtheria but who have been in contact with [illegible] diphtheria; [illegible] disease, are [illegible] cillus and of transmitting it to others. Such transmitters of the disease are termed "carriers." Group B, children actually suffering from the disease who go to school in an infective condition. This group consists: (1) of children with clinical signs of diphtheria but not ill enough to be kept at home; and (2) of children who have passed through a slight attack of diphtheria and return to school whilst still in an infectious condition. Group A is of the greatest importance, owing to the fact that "carriers" are the most difficult to detect and therefore the most likely to do mischief; they are also the most difficult to deal with after discovery. There is evidently need in London for greater facilities for bacteriological examination than those that at present exist. There can be no prospect of stamping out diphtheria until such facilities are everywhere available. "Contacts" with diphtheria are largely ignored and whilst still infective are permitted to mix with their schoolfellows and with other members of the community. With more frequent use of bacteriological diagnosis in cases presenting slight clinical symptoms and universal employment of the same methods in the case of "contacts" it should be possible in this country to obtain absolute control over diphtheria.

THE METROPOLITAN STREET AMBULANCE ASSOCIATION.

Two influential deputations were received by the police committee of the Corporation of the City of London on June 29th with reference to the ambulance question.

The Metropolitan Street Ambulance Association was represented by Mr. Reginald Harrison, the President, Mr. A. A. Bowlby, surgeon to St. Bartholomew's Hospital, Sir William Church, President of the Royal College of Physicians of London, Sir Dyce Duckworth, physician to St. Bartholomew's Hospital, Mr. Raymond Johnson, surgeon to University College Hospital, Surgeon-General A. H. Keogh, Mr. John Langton, surgeon to St. Bartholomew's Hospital, Sir Stephen Mackenzie, physician to the London Hospital, Mr. Charles Mansell Moullin, surgeon to the London Hospital, Sir E. Cooper Perry, superintendent at Guy's Hospital, Dr. H. D. Rolleston, physician to St. George's Hospital, Mr. Cuthbert S. Wallace, surgeon to St. Thomas's Hospital, Mr. C. H. Golding-Bird, surgeon to Guy's Hospital, Dr. A. W. James, honorary secretary, and the Hon. Dudley Leigh.

The deputation appointed by the central executive committee of the St. John Ambulance Association consisted of the following gentlemen: the Marquess of Breadalbane, Lieutenant-Colonel Sir Richard Temple, Surgeon-General Sir Joseph Fayrer, Surgeon-General Sir W. R. Hooper, Inspector-General B. Ninnis, and Colonel Sir Herbert C. Perrott.

Mr. HARRISON in his opening remarks said:—"We come as a deputation to-day from the Metropolitan Street Ambulance Association (a large body of medical practitioners resident in London) over which I have the honour to preside, to urge upon the Corporation of London the necessity for providing a more efficient ambulance service for the City. In furtherance of this object we have with us representatives from the three hospitals which receive the larger number of accidents occurring within the City of London—viz., St. Bartholomew's, Guy's, and the London Hospital. An independent deputation from the St. John Ambulance Association also accompanies us. In dealing with this object it must be remembered that of the large number of accidents and medical casualties which daily occur in the City many are in connexion with steam and electric machinery. The latter are frequently and increasingly the cause of what can only be described as the most frightful injuries and lacerations that can be conveyed through the streets. Permit me to say that we are specially desirous upon this occasion to urge upon the members of the committee the necessity for providing with as little delay as possible a more rapid and efficient service by the addition of horse ambulances to the existing appliances. By these conveyances not only is prompt and skilled attendance brought to and applied on the spot where the accident occurs but, if necessary, as often happens in cases of serious hæmorrhage and wounds, whilst the patient is in course of transit to the hospital. There would, I anticipate, as in other places where horse ambulances have been used for some years, be no difficulty in efficiently and economically manning them by advanced students connected with the City hospitals which I have mentioned. I will not occupy your time further, but with your permission, Sir, will call upon our secretary, Dr. Arthur James, to make a few remarks or to furnish replies to any questions you may wish to put as supplementary to what I have said."

Dr. JAMES then said: "Medical men who come in contact with cases of accident or sudden illness either as they occur in the streets or as they arrive at hospitals are painfully aware of the fact that under present conditions not only do people die who might be saved but some who would not otherwise die lose their lives entirely through the faulty method of their removal, while many others have their sufferings and their injuries greatly aggravated from the same cause. This condition of things is all the more to be deplored because the remedies are so simple and are so thoroughly proved in every other well-organised city. It is sometimes said that the expense to the community of providing an efficient ambulance service in London would be too great, but it must be apparent that the cost of all this unnecessary loss of life and prolonged disablement and treatment is enormously in excess of what would be required to remedy it. 35 years ago all these points were thoroughly discussed in New York with the practical result that a well-organised horse ambulance was established. The advantages of that service were so obvious that almost every large city in America soon followed that example, and gradually since then most of the best regulated cities of the world have adopted similar methods. It is noteworthy that many of the cities that now have good horse ambulance services at first, from motives of economy, tried to manage with litters but these were soon found to be inadequate and unsatisfactory as is the case in London. The extensive experience of other large cities proves beyond question that for the successful working of an efficient ambulance service the following provisions are essential: 1. That the police should be kept properly trained in first-aid work. 2. That by means of telephones easily reached from the scene of any accident it should be possible to summon an ambulance adequately equipped and in charge of a skilled attendant. 3. That the ambulance should be stationed in a convenient place in touch with the hospitals, ready to start at very short notice and able to reach the scene of the accident accompanied by the attendant within a few minutes. 4. That the vehicle should be so constructed that the attendant can remain close to the patient and able to watch and to administer treatment if necessary during the entire journey to home or hospital."

Sir DYCE DUCKWORTH and Sir JOSEPH FAYRER both laid great stress on the loss of life and unnecessary suffering due to the absence of an efficient ambulance service in London, and said that they were quite ashamed of the chief City of the Empire in this respect.

Sir RICHARD TEMPLE, Inspector-General NINNIS, Sir WILLIAM CHURCH, Mr. BOWLBY, and Mr. GOLDING-BIRD endorsed all that had been said and strongly advocated the establishment of an efficient horse ambulance service.

The deputations were most favourably received and after a very satisfactory interview withdrew.

ASYLUM REPORTS.

Surrey County Asylum, Brookwood (Annual Report for 1903).—The average number of patients resident during the year was 1180, comprising 492 males and 688 females. The admissions during the year amounted to 453—viz., 228 males and 225 females. Of these 296 were first admissions. Mr. J. E. Barton, the medical superintendent, states in his report that the total number of cases admitted "exceeds the admissions in any previous year, with the exception of 1884, since the opening of the asylum. ...... Many possessed insane inheritance or suffered from organic brain disease. Many also were actively suicidal and had made attempts or threats [of suicide] prior to admission and the need of constant supervision and forethought in the treatment of these cases was a source of great anxiety." Two females admitted whilst pregnant were confined during the year, the children being in due course removed by their friends. The difficulty of prompt egress in case of fire from the upper dormitories of the old asylum buildings had long been a source of anxiety. This matter has at last been successfully dealt with. Eight external fire-escape staircases have been fixed, openings have been made where necessary between the dormitories, and internal doors have been made to open both ways and all external doors to open outwards. Other improvements have also been carried out with reference to the water-supply and the heating and warming arrangements of the place. The number of patients discharged as recovered during the year amounted to 95—viz., 46 males and 49 females, or 8 per cent. of the average number resident. The deaths during the year amounted to 111, or 9·4 per cent. as calculated on the same basis. Of the deaths, four were due to renal disease, five each to cardiac disease and epilepsy, six each to cerebral hæmorrhage and pneumonia, 13 each to organic brain disease and senile decay, 16 to pulmonary and other forms of tuberculosis, 21 to general paralysis of the insane, and the rest to other causes. The Commissioners in Lunacy state in their report that the asylum wards were in excellent order, that the condition of the dormitories and bedding was very satisfactory, that the patients were found neatly and suitably clad and in a satisfactory condition as regards personal tidiness, that the dinners served to the patients were good in quality and sufficient in quantity, and that the medical case-books were well and properly kept. The committee of management states in its report that the maintenance rate for patients has been fixed at 12*s.* weekly per head for the whole year, that the extension of the laundry and of the water-supply has been proceeded with, and that the building of an extension to the asylum has just been concluded in a very satisfactory manner, the final adjustment of accounts showing that the work had been executed for £107 12*s.* less than the amounts voted by the Surrey County Council.

Monmouth County Asylum, Abergavenny (Annual Report for 1903).—The average number of patients resident during the year was 950, comprising 485 males and 465 females. The admissions during the year amounted to 220—viz., 118 males and 102 females Of these, 167 were first admissions. Dr. J. Glendinning, the medical superintendent, states in his report that a considerable proportion of the patients admitted were very much debilitated in health and bodily condition and bodily diseases and disorders were given as the cause of the mental disorder in 74 cases. Hereditary predisposition was traced in 43 cases and intemperance in drink in 13 cases. The number of patients discharged as recovered during the year amounted to 86—viz., 41 males and 45 females, or 9 per cent. of the average number resident. The deaths during the year amounted to 95, comprising 44 males and 51 females, or 10 per cent. as calculated on the same basis. Of the deaths three were due to epilepsy, four to pneumonia, five to cerebral hæmorrhage, seven [illegible] insane, 13 each to cerebral softeni[illegible] other forms of tuberculosis, 24 to [illegible] rest to other causes. The deaths [illegible] causes excepting in the case of two male patients; one, a private patient who was allowed out daily on parole, was accidentally killed by being knocked down by an express train while walking over a level crossing on the Great Western Railway, and the other committed suicide by hanging. "The great event of the year was the removal of 228 patients, belonging to the counties of Brecon and Radnor, to their new asylum at Talgarth ...... which was accomplished with but little trouble and without accident." The Commissioners in Lunacy state in their report that the patients appeared to be in good bodily condition and well cared for, that their dress and general appearance were satisfactory, that the dormitories were clean, comfortable, and well ventilated, and that the medical case-books were satisfactorily and well kept. They suggest certain slight improvements to secure a more efficient supply of water in case of fire than the inadequate supply which they witnessed at their visit. The committee of management states in its report that there is now vacant accommodation in the asylum for 76 patients—viz., 26 males and 50 females. Certain parts of the old building have been rebuilt and during the time of the use [illegible] longer period was not san [illegible]

Borough of Leicester Asylum, West Humberstone (Annual Report for 1903).—The average number of patients resident during the [illegible] and 456 females. [illegible] to 241—viz., 75 m [illegible] vere first admissions. Dr. J. E. Montague Finch, the medical superintendent, states in his report that "of the 806 patients remaining in the asylum at the end of the year 29 (13 males and 16 females) were deemed curable." As usual, many of the patients admitted were found to be in an extremely feeble state of bodily health "and the number of those permanently confined in bed continues to increase ...... most of them [being cases of] chronic ill-health and senile decay." Among the chief causes of insanity in the admissions intemperance in drink was ascertained to exist in 21 cases—viz., 18 males and three females, hereditary predisposition existed in 38 cases, and congenital mental defect was present in seven cases." Senile decay was the cause of mental failure in 16 cases. The number of cases discharged as recovered during the year amounted to 65—viz., 33 males and 32 females, or 8·3 per cent. of the average number resident. The deaths during the year amounted to 67—viz., 35 males and 32 females, or 8·5 per cent. as calculated on the same basis. Of the deaths two each were due to epilepsy and renal [illegible] and cancer, six to [illegible] or other forms of [illegible] general paralysis of the insane, and the rest to other causes. The general health of the inmates was good during the year and no inquest was held. Only one serious casualty occurred, that of a feeble epileptic female who broke her leg by falling in a fit. Two new greenhouses have been erected for the purpose of supplying the wards with additional plants and flowers. Steam ironing machinery and other labour-saving appliances have been added to the laundry. A pension scheme for officers and servants of the staff has been adopted. The scale of superannuation after 15 years of service is $\frac{15}{60}$ths of the average amount of salary and emoluments of the officer or servant, with an additional sixtieth for each further year of completed service, the maximum amount not exceeding $\frac{40}{60}$ths. The Commissioners in Lunacy state in their report that the day-rooms and dormitories of the asylum were found to be in excellent condition, that the electric lighting throughout the institution was nearly completed, that the condition of the patients seemed good and that they appeared to be well cared for, and that the medical case-books and registers were carefully and well kept. They recommend that extra exits and increased facilities for escape in case of fire should be provided for the male infirmary dormitory, with the exception of which they regard the existing arrangements as generally very satisfactory. The committee of management states in its report that nearly all the officers and servants of the institution have entered into the necessary agreement for giving effect to the pension scheme, that during the year additional gardens and walks have been laid out for the use of the patients requiring walking exercise, and that the asylum buildings externally and internally are in a satisfactory state of repair.

Royal Asylum of Montrose (Annual Report for 1903).—The average number of patients resident during the year was 677, comprising 313 males and 364 females. The admissions during the year amounted to 145—viz., 58 males and 87 females. Of these, 113 were first admissions. Dr. John G. Havelock, the medical superintendent, states in his report that of the total number resident about 130 were private patients. "The total number of private patients resident at the end of the year shows an increase of ten and the [illegible] patients a decrease of nine." [illegible] as voluntary boarders. Many [illegible] on were found to be in bad bodily health, six had general paralysis of the insane, six others had organic brain disease, seven were affected with pulmonary tuberculosis, nine were in an advanced stage of senile decay, 31 had various affections of the heart and vascular organs, and a few were suicidal, epileptic, or affected with asthma and bronchitis. The number of patients discharged as recovered during the year amounted to 69, or 10·2 per cent. of the average number resident. The deaths [illegible] pulmonary tuberculosis and cerebral hæmorrhage, five to organic cerebral disease (excluding hæmorrhage), nine to general paralysis of the insane, ten to cardio-vascular disease, 11 to senile decay, and the rest to other causes. The only accidents of a serious nature which occurred during the year were a simple fracture of the femur sustained by a fall, and the death of a female patient who had escaped from the buildings at dusk and made her way [illegible] "but," adds Dr. Havelock, "the absence of a complete history of the cases makes it impossible to assign an exact causation. ...... This is specially worthy of mention, as in some of the asylums in Scotland drawing patients from the large towns, excessive drinking has been certified with causing about 50 per cent. of the admissions. ...... The natives of the shires of Forfar and Kincardine are a hard-headed section of the population ...... and many can consume enormous quantities of alcohol over long periods of years without showing .. actual insanity." The Commissioners in Lunacy state in their report that the wards in the main building, the hospital block, and the male villa were maintained in excellent order, that the day-rooms and dormitories were bright and cheerful, that the former were well supplied with books, plants, and objects of interest, that the bedding was [illegible] condition, that the lavato[illegible] ere of the newest and best [illegible] of the patients was highly satisfactory and indicative of capable and conscientious care, and that the medical records and case-books were well and intelligently kept. The private patients in Carnegie House were "surrounded with every comfort, its accommodation being throughout of exceptional excellence."

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In 76 of the largest English towns 8509 births and 3867 deaths were registered during the week ending June 25th. The annual rate of mortality in these towns, which had been 14·6, 14·2, and 13·8 per 1000 in the three preceding weeks, further fell last week to 13·2 per 1000. In London the death-rate was 12·8 per 1000, while it averaged 13·4 per 1000 in the 75 other large towns. The lowest death-rates in these towns were 4·7 in Willesden, 7·0 in King's Norton, 7·1 in Aston Manor, 7·4 in Wolverhampton, 7·8 in Wallasey, 8·0 in East Ham and in Stockton-on-Tees, 8·3 in Hornsey, and 8·6 in Walsall and in Smethwick; while the highest rates were 17·8 in Liverpool and in Warrington, 18·3 in Stockport and in Oldham, 18·6 in West Bromwich, 18·9 in Middlesbrough, 20·0 in Sunderland, 22·0 in Bootle, and 22 3 in Birkenhead. The 3867 deaths in these towns last week included 444 which were referred to the principal infectious diseases, against 495, 492, and 487 in the three preceding weeks; of these 444 deaths, 180 resulted from measles, 84 from whooping-cough, 75 from diarrhœa, 48 from diphtheria, 27 from scarlet fever, 26 from "fever" (principally enteric), and four from small-pox. In Willesden, Norwich, Devonport, Wolverhampton, Aston Manor, York, Swansea, and in nine other smaller towns no death from any of the principal infectious diseases was registered last week, whilst the highest death-rates from these diseases were recorded in Brighton, Birkenhead, Liverpool, St. Helens, Warrington, Oldham, Burnley, and Hull. The greatest proportional mortality from measles occurred in Brighton, Birkenhead, Wallasey, Liverpool, Bootle, St. Helens, Manchester, Oldham, Burnley, Halifax, and Hull; from scarlet [illegible] Warrington, [illegible] teshead. The [illegible] om diarrhœa [illegible] large towns. Of the four [illegible] these towns last week [illegible] thamstow, one to Stock- [illegible] The number of small-pox patients under treatment in the Metropolitan Asylums Hospitals, which had been 96, 95, and 80 at the end of the three preceding weeks, had risen again to 83 at the end of last week; 16 new cases were admitted during the week, against ten, 21, and seven in the three preceding weeks. The number of scarlet fever patients in these hospitals and in the London Fever Hospital on Saturday last, June 25th, was 1629, against 1673, 1647, and 1630 on the three preceding Saturdays; 199 new cases were admitted during last week, against 207, 193, and 206 in the three preceding weeks. The deaths in London referred to pneumonia and diseases of the respiratory system, which had been 181, 157, and 142 in the three preceding weeks, declined last week to 141, and were nine below the number in the corresponding period of last year. The causes of 29, or 0·8 per cent., of the deaths registered in the 76 towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in West Ham, Leicester, Salford, Bradford, Leeds, Newcastle-on-Tyne, and in 51 other smaller towns; the largest proportions of uncertified deaths were registered in Reading, Liverpool, Huddersfield, and South Shields.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been 18·1, 16·2, and 17·0 per 1000 in the three preceding weeks, declined again to 15·9 per 1000 during the week ending June 25th, but was 2·7 per 1000 in excess of the mean-rate during the same period in the 76 large English towns. The rates in the eight Scotch towns ranged from 12·3 in Leith and 14·6 in Aberdeen, to 18·0 in Paisley and in Greenock and 21·1 in Dundee. The 526 deaths in these towns included 27 which were referred to whooping-cough, 22 to diarrhœa, 12 to measles, six to diphtheria, four to "fever," two to scarlet fever, and one to small-pox. In all, 74 deaths resulted from these principal infectious diseases last week, against 64, 73, and 66 in the three preceding weeks. These 74 deaths were equal to an annual rate of 2·2 per 1000, which was 0·7 per 1000 above the mean rate last week from the same diseases in the 76 large English towns. The fatal cases of whooping-cough, which had been 21 in each of the two preceding weeks, increased last week to 27, of which 13 occurred in Glasgow, five in Edinburgh, three in Dundee, two in Aberdeen, and two in Paisley. The deaths from diarrhœa, which had been 14, 24, and 20 in the three preceding weeks, rose again to 22 last week, and included nine in Glasgow, seven in Dundee, two in Aberdeen, and two in Greenock. The fatal cases of measles, which had been 16 and 14 in the two preceding weeks, further declined last week to 12, of which five were registered in Glasgow and four in Edinburgh. The deaths from diphtheria, which had been four in each of the two preceding weeks, increased to six last week, and included two in Glasgow and two in Edinburgh. The fatal cases of "fever," which had been two in each of the two preceding weeks, rose last week to four, of which two occurred in Dundee. The death from small-pox belonged to Glasgow. The deaths referred to diseases of the respiratory organs in these towns, which had been 87, 68, and 93 in the three preceding weeks, declined again last week to 64 and were 28 below the number in the corresponding period of last year. The causes of 14, or nearly 3 per cent., of the deaths registered in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 19·7, 18·3, and 21·7 per 1000 in the three preceding weeks, declined again to 19·5 per 1000 during the week ending June 25th. During the past four weeks the death-rate has averaged 19·8 per 1000, the rates during the same period being 13·0 in London and 15·6 in Edinburgh. The 142 deaths of persons belonging to Dublin registered during the week under notice showed a decline of 16 from the number in the preceding week and included three which were referred to the principal infectious diseases, against 16, four, and six in the three preceding weeks; of these, two resulted from diphtheria and one from measles, but not any from small-pox, scarlet fever, whooping-cough, "fever," or diarrhœa. These three deaths were equal to an annual rate of 0·4 per 1000, the death-rates last week from the principal infectious diseases being 1·4 in London and 1·9 in Edinburgh. The 142 deaths in Dublin last week included 18 among children under one year of age and 38 among persons aged 60 years and upwards; the deaths of infants showed a considerable decline, while those of elderly persons were slightly in excess of the number in the preceding week. Five inquest cases and three deaths from violence were registered; and 50, or more than a third, of the deaths occurred in institutions. The causes of three, or more than 2 per cent., of the deaths registered in Dublin last week were not certified.

METROPOLITAN HOSPITAL SUNDAY FUND.

THE following are some additional principal amounts received at the Mansion House on behalf of the Hospital Sunday Fund. The total of the sums paid in up to Wednesday evening amounted to £38,000, to which, of course, will be added Mr. Herring's generous contribution of 5*s*. in the £.

	£	*s*.	*d*.
St. Peter's, Vere-street	644	0	0
Holy Trinity, Sloane street	460	0	0
St. Paul's, Knightsbridge	382	0	0
St. Mary's, Bryanston-square	372	0	0
St. Columba's, Pont-street	206	0	0
Holy Trinity, Tulse-hill	201	0	0
St. Stephen's, Gloucester-road	148	0	0
St. Barnabas', Kensington	148	0	0
Christ Church, Albany-street	137	0	0
St. Silas', Nunhead	124	0	0
Christ Church, Gipsy-hill	118	0	0
St. James's, Kidbrooke	110	0	0
Hampstead Parish Church	108	0	0
St. Mark's, North Audley-street	105	0	0
St. James's, Paddington	100	0	0
Regent's-square Presbyterian Church	100	0	0
[illegible] go	93	0	0
[illegible]	92	0	0
Victoria park Christian Evidence Association	90	0	0
Stamford Hill Congregational Church	90	0	0
St. James's, Clapham Park	84	0	0
Holy Trinity, St. Marylebone	83	0	0
Trinity Church, Hampstead	74	0	0
Lee Parish Church	73	0	0
St. Matthew's, Denmark Hill	70	0	0
St. Luke's, Chelsea	66	0	0
St. John's, Notting Hill	55	0	0
St. Saviour's, Paddington	54	0	0
St. James's, Hatcham	53	0	0
Heath-street Baptist Church, Hampstead	52	0	0
[illegible] Church	51	0	0
[illegible]	50	0	0
St. Mary's, Balham	48	0	0
St. Luke's, Nutford-place	48	0	0
St. Olave's, Woodberry Down	47	0	0
Christ Church, Beckenham	46	0	0
St. Anne's, Soho	43	0	0
[illegible]	41	0	0
[illegible]	39	0	0
[illegible] reet	38	0	0
[illegible]	35	0	0
[illegible]	35	0	0
[illegible]	35	0	0
[illegible]	35	0	0
[illegible] ley	34	0	0
[illegible]	34	0	0
[illegible]	33	0	0
[illegible]	32	0	0
[illegible]	32	0	0
[illegible]	30	0	0
[illegible]	30	0	0
Islington Parish Church	30	0	0
Christ Church, Wanstead	30	0	0
St. Barnabas', Clapham-common	29	0	0
Berkeley Chapel, Mayfair	26	0	0
Bushey Parish Church	25	0	0
Regent's Park Baptist Chapel	23	0	0
[illegible]	23	0	0
[illegible]	23	0	0
[illegible]	23	0	0
[illegible]	23	0	0
[illegible]	23	0	0

THE SERVICES.

ROYAL NAVAL VOLUNTEER RESERVE.

THE undermentioned gentleman has been appointed surgeon—viz.: James John Marsh (dated June 27th, 1904).

IMPERIAL YEOMANRY.

Lovat's Scouts: Alexander George Lovett-Campbell to be Surgeon-Lieutenant (dated May 28th, 1904).

VOLUNTEER CORPS.

Royal Garrison Artillery (Volunteers): 4th Durham: Surgeon-Lieutenant J. S. Milne to be Surgeon-Captain (dated June 25th, 1904).

Royal Engineers (Volunteers): East London (Tower

F. S. Edwards to be Surgeon-
).
talion the Northumberland
F. N. Grinling is borne as

Infantry
2nd Volu
J. A. C. Roy resigns his commission and is appointed Surgeon-Lieutenant (dated June 25th, 1904). 3rd Volunteer Battalion the Welsh Regiment: Evan James Trevor Jones,
June 25th, 1904). 13th
Surgeon-Lieutenant J. S. Hudson to be Surgeon-Captain (dated June 25th, 1904). 2nd Volunteer Battalion the York and Lancaster Regiment: Surgeon-Lieutenant V. Graham to be Surgeon-Captain (dated June 25th, 1904).

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).

Argyll and Sutherland Bearer Company: William Cochrane Murray, to be Lieutenant (dated June 25th, 1904).

THE HOUSES OF PARLIAMENT AND WAR OFFICE RECONSTRUCTION.

The recent debate in the House of Lords on War Office Reconstruction led to some important statements on the part of Lord Lansdowne and Lord Donoughmore which will serve to indicate in a general way the view entertained by the Government in respect to the report of Lord Esher's Committee on that subject. Whilst agreeing in many ways with its aim and general principles it is clear from what their lordships said on behalf of the Government that Ministers do not by any means hold themselves bound by everything that appears in that report and on some points even emphatically dissent from it. But the discussion in the House of Peers, however interesting in itself, does not touch the scheme of army reform which has still to be drafted and laid before Parliament. There was a lively debate on Army Reform in the House of Commons on Tuesday last, started by Mr. Beckett. Some important and instructive information was elicited from Mr. Arnold-Forster and from the Prime Minister. The country, no doubt, is keenly interested in the production of the long-expected scheme of army reform, but it cannot be denied that the problem to be solved is difficult and complex and so long as it is honestly tackled the nation will not grudge any reasonable delay in making public the scheme. Mr. Arnold-Forster does not despair of putting a scheme before the country in a fairly complete form or of getting an army suited to the requirements of the Empire at a reduced rate of army expenditure.

THE BIRTHDAY HONOURS.

The names of members of the medical profession who are included in the list of birthday honours will be found in another part of the present issue of THE LANCET. The list includes the following officers connected with the services: Deputy Surgeon-General J. H. Thornton, C.B., I.M.S. (retired), and Surgeon-General E. Townsend, C.B., C.M.G., A.M.S., who have been promoted to Knight Commanderships of the Bath, and Surgeon T. Ligertwood (retired pay), late physician and surgeon to the Royal Hospital, Chelsea, Surgeon-General W. J. Fawcett, A.M.S., and Hon. Colonel J. E. Squire, R.A.M.C. (Volunteers), London Companies, who receive Companionships of the same Order.

THE WAR IN THE FAR EAST.

Since the fiercely fought battle of Telissu with such disastrous results to the Russian forces Admiral Togo's naval victory at Port Arthur has to be recorded. Without entering into the details connected with the attempt of the Russian fleet to escape it may be said that the attempt failed. The circumstances were very similar to those which took place in February last. The Japanese torpedo flotilla was launched at night against the Russian fleet, the Japanese *battle-ships keeping outside* the mine area. The dire results as regards the Russian fleet are well known. The attempted sortie from Port Arthur ended in disaster and Admiral Togo's fleet purchased a victory at a relatively insignificant cost. Nor can it be said that the progress of the events on the land side has been more favourable to the Russians. The strategical outlook from a Russian standpoint is not a promising one and it is not surprising to learn that fears are entertained in Russia that General Kuropatkin is not ready at the present time to cope with the advancing enemy. Whether he will seek by a rapid northward march to escape from the Japanese fast closing in upon him or will concentrate his forces and make a big fight of it somewhere about Tashichao now remains to be seen. If the Japanese have captured three passes General Kuropatkin, unable to retreat northward, may be compelled to fight or to surrender. Be all this as it may, there must soon come an end to speculation for the season is fast approaching when there must be a *temporary suspension* of all active hostilities. This fact must be well known to the Japanese and we may consequently be sure that they are now only waiting until the disposition of their forces *is such as* to enable them to strike with what they consider likely to be to the best advantage to themselves. We learn but little of the medical history of the campaign and what we do is rather conflicting. We shall probably know next to nothing of a trustworthy kind on this head until the war is over. The troops of the first Japanese army are reported to be in good health and spirits. Native reports from Niu-chwang state that the Russians are losing many horses from glanders. On June 24th there were 800 wounded at the Russian camp *three miles east of Niu-chwang. A few surgeons of the Red* Cross Society had arrived there but many more are needed. Local medical men are offering their assistance which the Russians decline. At the battle of Telissu the behaviour of the medical men and ambulance attendants who remained the whole time under fire with the Russian troops is described as having been admirable. The losses on the part of the Russians on that occasion were very large and turn out to have been much in excess of what was originally reported. General Oku reports: "Russian corpses buried by us near Telissu up to evening, June 17th, amounted to 1516. Russian corpses still forthcoming and believed to increase considerably. Natives say Russians during engagement carried back their killed and wounded by railway, while later, when about taking flight, they buried or cremated corpses near Huasungkou." The hardships of the retreat of the unhappy Russian soldiers following the battle of Telissu were terrible owing to the fatigue, want of food, exposure, and heavy rains after their two days of hard fighting. It is a notable feature of this war that the loss of Russian officers under fire has, as compared with men, been so disproportionately large.

The *Kharbin Viestnik* observes that near Tchita on the river Peschanoı the building of a large hospital to accommodate 5000 patients has been begun. It will consist of 25 buildings each to take in 200 beds exclusive of other buildings for the staff and stores.

The *Sviet* gives the following as the financial state of the Russian Red Cross Society on June 1st. The total in hand was £737,087. For special account of the Russo-Japanese war it had received £356,222 and paid out £298,925, balance £57,296 less a fraction. Besides this there is a reserve capital for the pressure of war time of £227,951. The May receipts were £117,341 and the payments were £82,756.

Correspondence.

"Audi alteram partem."

THE INFLUENCE OF THE UNRECOGNISED CASE IN THE SPREAD OF COMMUNICABLE DISEASE.

To the Editors of THE LANCET.

SIRS,—There is a statement and there is a deduction in your otherwise admirable leading article under the above heading in THE LANCET of June 11th, p. 1666, to which exception will be taken by those who have given special attention to the "isolation" question. As to the first it will be felt that the comparison of such with ignorant and unreasoning antivaccinationists can hardly hold in view of the fact that all the objections to the aggregation system have been raised on purely scientific grounds—unless, indeed, the word "science" has been modernised out of its etymological signification. Usefulness is a tangible thing and if "these useful institutions" are rendering any service to the community how is it that no data are forthcoming in support of such a claim? Not only has no man ever yet attempted to justify the existence of the isolation hospital on scientific lines but nobody has dared to excuse it. And good reason why; for, on the one hand, we have the inexorable facts of secondary infection, post-scarlatinal diphtheria, return cases, and endemic scarlet fever, with numerous formidable aggregation et ceteras; on the other—what? a guess, a surmise—a guess with a memory so short that it forgot the teachings of experience, from the old Edinburgh fever house downwards—a surmise so crude that it was able to ignore the findings of bacteriology. So the spectacle presented to the world is that of the defeat of the objects and aims of sanitary betterment by a system designed as a preventive measure.

Turning to the part played in the spread of disease by the unrecognised case I submit, Sirs, with deep respect, that a very different lesson may be read into your article from the one you seek to inculcate. Were the world not already weary of registrations, notifications, "isolations," State regulation, and compulsion, would the harassing and costly espionage suggested in your article minimise the evil? I aver that it would not. Diphtheritic bacilli flourish in the throats of healthy people. Numbers of cases of scarlet fever remain unrecognised until the peeling stage and after, and my experience as public vaccinator has shown me that small-pox may run its course without rash and without any marked malaise. And where would the bacteriologist come in in any of the three diseases? In diphtheria where the presence of the organism does not necessarily predicate the existence of the disease nor its absence negative it? Scarlet fever and small-pox? in one of which the *materies morbi* is undiscovered and in the other only guessed at. We claim, Sirs, that the unrecognised case is but one of the many rifts in the lute which there is no mending. More frightening would mean more concealment and notwithstanding the tact and gentleness with which the sanitary officials have discharged their onerous duties it is concealment that has kept the epidemic of small-pox going in this city since January last. The present somewhat alarming recrudescence is entirely due to a concealed case.

The concluding paragraph of your leading article makes one wonder why much of the rest was written. "A careful study of the conditions which have led almost to the extinction of typhus fever and to the decline of tuberculosis in this country may perhaps help us to make greater resistance to other infectious diseases." They are wise words and I commend them to the consideration of those public health enthusiasts who see no brighter and better fate in store for their fellows than incarceration in a limbo which would make life not worth living. For these great happenings we are in debt neither to spying, collective "isolation," nor restrictive laws, but to works of sanitation and general sanitary betterment which left law-abiding individuals free from State interference and worrying espionage.

I am, Sirs, yours faithfully,
Nottingham, June 24th, 1904. EDWARD DEAN MARRIOTT.

APPLIANCES FOR PREVENTION OF MINERS' PHTHISIS.

To the Editors of THE LANCET.

SIRS,—With reference to annotations in THE LANCET *re* prevention of miners' phthisis I should like to call your attention to the following facts. Any remedy proposed must not interfere with the efficiency of the boring machine; there must be no substituting of an inferior machine for a better one. Now the water drill is much inferior to the air drill in efficiency and it is not reasonable to expect the managers of mines or even the miners on contract work to use a drill which will give them less returns of ore and consequently less pay. Through the courtesy of the Climax rock drill manufacturers I have had the opportunity of seeing Britten's appliance and also the Climax atomiser and will describe the superiority of the latter. From my observations when seeing Britten's device at work during the drilling of a dry hole I came to the conclusion that although the dust arising therefrom was partially wetted it was not wholly so, with the consequence that the partially wetted dust appeared to be blown about in the immediate neighbourhood of the hole to such an extent that the partly damped particles settled very readily on surrounding objects, including, of course, the men themselves.

It seems to me that an apparatus of this sort employs too much compressed air and not sufficient water, with the result that the water used does not sufficiently damp the dust to drop it in the form of mud or sludge and that the apparatus employing, as before stated, a rather large quantity of air is inclined to blow the partly wetted particles of dust all over the immediate vicinity of the rock drill, and as it does not drop immediately to the ground will be liable to be inhaled by the men employed on the rock-drilling machines.

Now, the device of the Climax rock drill (admitted by the Royal Commission of inquiry as to trade in South Africa to be the only serious English competitor) has many advantages over Britten's. The volume of air used is much smaller, the quantity of water sprayed against the orifice of the dry hole is much larger, so that the particles of [illegible] wetted and drop in practically a vertical [illegible] of the hole being drilled. This appara[illegible] Rock Drill Co. of Carn Brea can be regulated to employ water in variable quantities. It can spray water at the rate of one gallon in five minutes or one gallon in 80 minutes. It also has the unique advantage of being able to employ the same water many times over and is entirely controlled by the air tap of the rock drill, so that both the rock drill and the spray are operated by the one rock drill man, obviating the employment of a second man to hold the water jet, as in the old methods. The machine itself cannot be operated without the spray being also operated, as it is attached to the air tap of the drill and the miner cannot possibly work one without the other.—I am, Sirs, yours faithfully,

JOHN HERBERT TONKING,
Surgeon, Miners' Hospital.
Camborne, Cornwall, June 25th, 1904.

HYDROGEN PEROXIDE AS A GERMICIDE IN TYPHOID FEVER.

To the Editors of THE LANCET.

SIRS,—In making a number of experiments lately on the influence of antiseptics on digestants and infective microbes in conjunction with Dr. J. L. Dimond, pathologist to the Liverpool Royal Southern Hospital, we were particularly struck with the effect of hydrogen peroxide solution. In comparatively small quantities—20 minims in one ounce of water—this caused complete sterility of the bacillus typhosus. Many years ago Brieger demonstrated the small degree of virulence of the toxin of this bacillus when cultivated on pure peptones and ever since reading his results I have supported my hospital patients—I think with great advantage—on these nutrients. If we possess in hydrogen peroxide, as I am persuaded we do, a harmless but efficacious germicide in typhoid fever we can attack the *causa morbi* in a double direction. As I do not remember to have seen in the general advocacy made by the late Sir B. W. Richardson and others of the germicidal effects of the drug a notice of its influence on the particular bacillus in question I venture to commend its trial to medical [illegible]

I am [illegible]
Liverpool, June 22nd, 1904. [illegible] ARTER.

A CHRONIC NEUROSIS CHARACTERISED BY FREQUENT PAROXYSMS OF PAIN, SWELLING, AND HÆMORRHAGE IN VARIOUS PARTS OF THE BODY.

To the Editors of THE LANCET.

SIRS,—An original article by Dr. T. K. Monro and Dr. A. N. McGregor dealing with this subject appeared in THE LANCET of April 16th, p. 1039, just to hand. A condition similar in many respects and which at the time was a cause for much speculation occurred in a patient, a single man, aged 26 years. He was under my treatment for pulmonary tuberculosis, both apices showing evidence of disease. A week after he was first seen swelling and severe pain occurred in the left knee. The pain was very intense down the front of the leg to the foot. Four distinct swellings appeared, reddish blue in colour, non-pitting and elastic on pressure, but extremely painful, two on the outer side of the leg, one over the tibia, and one on the calf. On the thigh of the same side two larger swellings approaching the size of an orange appeared a day later. These were not so painful. The knee was red and warm and fluid was present in the joint. Fomentations were applied and the limb was elevated on a splint and the swellings subsided in a week, leaving a brownish staining which entirely disappeared in three or four weeks, though pain still was present on movement. The knee also became reduced in size though some fluid was still present.

In three months he had another attack with rise of temperature to 101° F., accelerated pulse, and vomiting. On this occasion both legs and arms were affected, the left knee being more swollen than the right. Swellings were noted at irregular intervals. They were at first white in colour like the surrounding parts but quickly became dark red. Pain was severe and only slightly relieved by fomentations and sedative applications. One swelling, which was fluctuant, situated on the tibia below the knee on the inner side of the leg, I incised and found a quantity of gelatinous matter of a reddish white tinge. There was little bleeding and the wound healed perfectly after one dressing. Under the microscope only leucocytes and fibrin could be seen with a few red blood corpuscles. No subsequent swelling occurred in that region. At the end of a week the temperature fell to normal and the swellings subsided and the patient's condition improved though he had considerable difficulty in flexing the knees and ankles. He was sent into the country for six months and on his return to Melbourne he again came under notice, having spat up some dark blood on the previous night. An examination of the lungs showed much improvement. He had gained weight and felt well with the exception of severe pain in the region of the left sciatic nerve. The right knee on this occasion was swollen and contained fluid but was not painful. He was sent to the sanatorium but after two months was sent to town for operation on the right knee. There were redness and swelling with fluctuation two and a half inches below the joint and severe pain down the leg. This disappeared after a few days, so operation was considered unnecessary. He was then able to resume his ordinary occupation but had to use sticks to enable him to move about, both limbs being stiff and painful.

Three months later he was a spectator on a stand and missing his footing he fell down steps a distance of 12 or 13 feet. Beyond a slight shock he experienced no inconvenience and next day was in some remarkable, almost incredible, way able to walk and to move as well as ever he could. He has improved in condition and is now engaged in his business, the lung disease having apparently become quiescent.

At the time of these attacks I was inclined to the belief that they were due to angio-neurotic œdema or purpura rheumatica. There was no hæmophilia nor evidence of purpura hæmorrhagica, and urticaria could not be considered as there were no wheals or itching. Although there was no hæmorrhage from the bowel or hæmoglobinuria as described by Wende the symptoms seemed to point more to œdema angio-neuroticum than purpura rheumatica as there was no constitutional disturbance or petechial painful crops as generally found in the latter disease. The condition and its termination (it is 12 months since the accident) are very interesting.

I am, Sirs, yours faithfully,
Melbourne, Australia, May 24th, 1904. ROBT. H. STRONG.

SHOULD MEDICAL MEN BE ALLOWED TO DISPENSE THEIR PRESCRIPTIONS OR NOT?

To the Editors of THE LANCET.

SIRS,—THE LANCET of June 18th contains a letter inquiring whether medical men should be allowed to dispense their prescriptions. Your correspondent is evidently of opinion that apart from the question of prohibition, which has for the time ceased to be a question, it is preferable that medical men should dispense. He quotes two instances which he takes to prove the inefficiency of certain druggists in this part of their business. Once he sent for nitrite of amyl (in capsules). The druggist had none. We are not informed whether he was without the nitrite itself. He had "something that would do as well." There are, of course, other drugs which are used for the same purpose, such as trinitrin. Perhaps it is not unworthy of note that your correspondent himself appears for the moment to have exhausted his own supply. On another occasion he prescribed nepenthe but with a like result. Many druggists keep this preparation; others, as well as probably the majority of practitioners, do not, for nepenthe is not to be found in any British Pharmacopœia. It is simply a proprietary article, one of a thousand stock medicines by means of which, aided not a little by the dispensing system in medical practice, manufacturers of drugs are gradually capturing both the practitioner and the retail druggist. I do not consider, Sirs, that your correspondent's cases are sufficient to justify his sweeping condemnation of the latter. At the same time I admit that many drug-shops are not so fully stocked with all the requisites of treatment as they should be. The reason is clear: so long as medical men continue to dispense demands upon the druggist will be comparatively few. Let them cease dispensing and they will allow an expansion of trade which will insure that the druggist maintains a supply adequate to the needs of his customers. The prices quoted by your correspondent must be extreme in any place. In this part of London *1s.* is about the usual charge for dispensing a prescription. I think there can be very little doubt that the educated druggist of to-day is as a rule what he certainly ought to be—the fittest person to carry out that work of dispensing for which he has been carefully and expressly instructed.

I am, Sirs, yours faithfully,
Highbury, London, N., June 27th, 1904. B. G. MORISON.

THE INSURANCE OF MEDICAL MEN AGAINST THE DANGERS OF THEIR PROFESSION.

To the Editors of THE LANCET.

SIRS,—Dr. J. Eyre's unfortunate experience as described in THE LANCET of June 25th, p. 1811, entirely bears out my own experience as regards the accident policies issued by Scottish companies. On four occasions, and only four, I have had to certify for accidents incurred by holders of Scottish policies and each time the claim has been disputed, and if allowed at all only paid after a good deal of difficulty. One case in particular I remember when a Scottish office absolutely refused to allow a "total disablement" claim which was paid without demur by an English company. Nothing would induce me to take out a Scottish accident policy for myself and I always advise anyone whom I know to hold one to drop it and take a policy in a well-known English company instead. I do not remember that I have ever had a claim disallowed in an English office.

I am, Sirs, yours faithfully,
Plymouth, June 25th, 1904. C. E. RUSSEL RENDLE.

THE NOMENCLATURE OF THE SIGMOID FLEXURE.

To the Editors of THE LANCET.

SIRS,—I notice that in the last edition of Sir Frederick Treves's "Manual of Operative Surgery," vol. ii., p. 291, the author and his colleague, Mr. Jonathan Hutchinson, jun., have perpetuated an error into which Sir Frederick Treves fell when writing his "Anatomy of the Intestinal Canal and Peritoneum." On p. 61 of that work Sir Frederick Treves suggested that the form of the sigmoid flexure was rather that of the Greek capital letter Omega with which we are all familiar, and that the name of this coil of bowel might with advantage be correspondingly altered.

Permit me to point out that the sigmoid flexure takes its name from a form of the Greek letter Sigma which resembles the capital Omega laid on its side, or our modern capital letter O with a little hook added below. This form of Sigma will be found in all the old Greek books in which contractions are used in the type and it has disappeared from modern ones; whence Sir Frederick Treves's error. The editors of the various editions of Quain's Anatomy take care to give the [illegible] index to that work (for example, ni[illegible] The sigmoid notch of the lowe[illegible]vities of the ulna and lower end of the radius are consequently correctly named.

With regard to the sigmoid flexure this matter is far from having a merely academic interest and that is my reason for this communication. Sir Frederick Treves is quite right in pointing out what is the actual shape of this bend of the bowel because arguments for and against the use of O'Beirne's tube which I have read in medical literature have evidently been affected by the conception formed in the mind of the arguer of the exact form of this part. In his work on "Intestinal Obstruction" Sir Frederick Treves shows himself quite sufficiently alive to the dangers of what he terms "the long tube" as a means of diagnosis (second edition, p. 319). He rightly describes the part as a *loop* provided with an extensive mesocolon, in some examples amounting to from 18 to 20 inches in length and capable of touching the gall-bladder, the cæcum, or the umbilicus. The importance in everyday practice of keeping in the mind a correct conception of this part of the intestine is obvious and I think the practitioner will be greatly aided if he remembers the sigmoid cavities of the radius and ulna and why they are so called.

I am, Sirs, yours faithfully,
J. B. NIAS, M.D. Oxon.

Rosary-gardens, S.W., June 22nd, 1904.

THE ROYAL ORTHOPÆDIC HOSPITAL.

To the Editors of THE LANCET.

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FIFTY YEARS OF PAROCHIAL MEDICAL SERVICE.—Mr. Robert Girvan, L.R.C.S. Edin., who was appointed to his present position as medical officer to the Parish council of Maybole, N.B., on June 7th, 1854, has been congratulated by the chairman on behalf of the council on the occasion of his jubilee, the chairman also expressing the appreciation of the council of the thorough and conscientious manner in which he had always performed his duties. Mr. Girvan served for 35 years in the 2nd Volunteer Battalion Royal Scots Fusiliers and retired with the rank of Surgeon-Lieutenant-Colonel, being awarded the volunteer decoration. It is entirely owing to Mr. Girvan's retiring disposition that no public ceremony has taken place to mark his 50 years of parochial service.

THE FOLKESTONE PUBLIC HEALTH CONGRESS AND THE SANDGATE SCANDAL.

(FROM OUR SPECIAL SANITARY COMMISSIONER.)

(Concluded from p 1754 of THE LANCET *of June 18th, 1904.)*

SANATORIUMS IN SWITZERLAND, DENMARK, AND HOLLAND.—RESTRICTIVE LEGISLATION IN NORWAY.—THE CAUSES OF THE PROGRESS IN ENGLAND AND GERMANY.

CONSIDERING the world-wide renown acquired by such places as Davos, Switzerland may be placed in the forefront when dealing with the question of sanatoriums for the treatment of pulmonary tuberculosis It does not seem, however, as if any very remarkable improvement had been effected. The statistics are given in averages for five years and according to these figures the deaths from tuberculosis of the lungs and of the larynx amounted annually to 22·15 per 10,000 inhabitants from 1878-82, to 22·77 during the next five years, and to 22·23 and 22·28 during the following two groups of five years. It may therefore be said that from 1878 to 1897 the fluctuations showed no definite sign of improvement. It is only during the four years from 1898 to 1901 that there is a distinct change for the better, as the annual average for these four years is 19 42 per 10,000 inhabitants. It is, however, very difficult to connect this slight improvement with the sanatoriums as there were many other influential causes at work. The figures also are very scattered and there does not seem to be any comprehensive summary in existence. This is but natural when it is remembered that the Swiss Confederation is subdivided into 22 different constitutions, and further, that nearly all the work has been done by private enterprise. Dr. F. Schmid, Director of the Federal Sanitary Bureau at Berne, does, however, give a list of the popular sanatoriums existing at the beginning of 1903 and their cost. At Heiligenschwendi, 1140 metres above the sea, there has been since 1895 a sanatorium of 108 beds which cost £201 per bed, and a pavilion holding 40 beds has since been added. At Davos the "in der Stille" sanatorium, founded in 1896 by the Basle Society of Public Utility, is 1660 metres above the sea, has 86 beds, and cost £263 per bed In the canton of Zürich the Wald sanatorium is 907 metres above the sea and since 1898 has 90 beds which cost £243 each. At Braunwald, canton Glarus, 1180 metres above the sea, there is a sanatorium of 30 beds which was opened in 1897 and cost £255 per bed. The only instance where the cost was less than £200 is that of a small sanatorium of 22 beds at Malvilliers, in the canton of Neuchâtel, 860 metres above the sea, and in this exceptional case the cost per bed is set down at £181. There are 100 beds in the sanatorium of Leysin and 65 at Clairmont-sur-Sierre. The cantons of Lucerne, Zug, Fribourg, Soleure, [illegible] St. Gall, Aargau, an[illegible] but some £40,000 ha[illegible] toriums [illegible] they [illegible] with [illegible] retain, some beds for their own patients.

By the side of the provision thus made for the Swiss who suffer from tuberculosis there are a large number of popular sanatoriums founded, peopled, and supported by foreign nations. Thus, there are at Davos a Dutch sanatorium with 50 beds, a German sanatorium with 80 beds, and the English invalids' home with 14 beds. There are also a large number of private sanatoriums for the wealthy of all countries at Davos, Arosa, Leysin, and Montana which contain altogether about 1500 beds. Dr. Schmid pointed out in his report on this subject that all the popular sanatoriums of Switzerland have been created by private initiative. The Society of Public Utility has done most in this direction. The communes, the trade corporations, and charitable persons have subscribed funds or guaranteed annual [illegible] loans or given grant[illegible] are covered first b[illegible] themselves or by the [illegible] or else by the As[illegible] approach to our Poor-law administration. Thus, out of 271 patients treated in 1901 at the Zürich sanatorium of Wald 178 paid for their own board, 40 were paid for by the benefit societies to which they belonged, 33 were recipients of private charity, and only 20 were sent by the Assistance Publique. As for the result of such treatment figures are given only in regard to 2954 cases treated from 1899 to 1901 and divided into three stages or categories according to their condition on admission. Among the patients in the first stage 96 per cent. improved, 3 per cent. remained stationary, and 1 per cent. died. Of the second stage 84 improved, 12 did not, and four died per 100 patients. Out of the patients in the third stage only 58·2 improved, 39·5 remained as they were, and 2·3 per cent. died. Those who were restored to their full working capacity amounted to 85·2 per cent. among the patients in the first stage, 49·5 for the second stage, and 10·9 for the third stage.

To go to another small country, Dr. Knud Faber of the University of Copenhagen has urged that tuberculosis follows much the same course as leprosy and necessitates similar precautions. The departmental medical officer of Färöe, Dr. Boeg, was able to obtain the history of 342 patients suffering from tuberculosis who lived simple isolated lives in the archipelago and whom he had watched for 20 years. No less than 77 per cent. of these cases seemed due to infection as the patients had frequently associated with others suffering from the disease; in 66 per cent. they lived in the same house; in 40 per cent. one of the parents and in 47 per cent. a brother or a sister suffered from tuberculosis. The necessity of special hospitals is generally recognised in Denmark and the State has given grants in aid of the benefit societies that seek to build such hospitals or sanatoriums. The law of April 12th, 1892, sanctions the giving by the State of a subsidy of 2*s.* 6*d.* per day per patient to benefit societies which place their funds under the control of the State. There are now 1228 such funds or societies with a membership of close upon 400,000 persons. In the ordinary hospitals of Copenhagen it was found that 20 per cent. of the patients were suffering from tuberculosis of the lungs and this led to the opening, at a cost of 700,000 crowns, of a sanatorium in the forest of Bosera containing 144 beds. In the island of Bornholm and elsewhere there are sanatoriums for scrofulous and other diseases and there are private sanatoriums, one of 170 beds, outside, but near to, Copenhagen for the treatment of tuberculosis. So much has been done that in the capital of Denmark the mortality from this disease has been reduced from 3·1 to 1·8 per 1000 inhabitants.

It is, however, in Norway that the most stringent measures have been taken implying absolute belief in the infectious nature of phthisis. Nevertheless the legislation bearing on this question is of too recent a date to enable any opinion to be formed as to the result; also its object is to prevent the spread of the disease rather than to cure the patients. The whole question is governed by a special law which bears the date May 8th, 1900. This law renders the notification of cases of tuberculosis obligatory whenever the sputum is likel[illegible] Then prophylactic measures, [illegible] the case, are imposed. [illegible] in case of death or of removal. No boarder can be taken to lodge with a family where there is a case of tuberculosis. No person suffering from this disease is allowed to prepare, to sell, or to have anything to do with articles of food; nor may such engage themselves as nurses or domestics in private families. Finally, any patient who has not the means of nursing himself properly at home or who is neglectful and does not show himself willing to carry out the prophylactic instructions given to him can be seized and conveyed by force to a hospital.

In Holland the State aids those who seek to establish sanatoriums. In Belgium it has been seen that the authorities governing the province of Liège have made a notable effort at Borgoumont, while both France and Italy have only reached the stage of discussing whether or not the State should take the initiative and build sanatoriums for this purpose. Yet the Assistance Publique of Paris has [illegible]shed a sanatorium at Angicourt and when M. Millerand [illegible]inister of the Posts and Telegraphs he sought to [illegible] another sanatorium for the postal servants. Still, [illegible]chemes find very strong opponents, Dr. A. Robin [illegible] placed himself at the head of the opposition. This eminent physician maintains that a certain number of patients are admitted into sanatoriums who are not really infected with tuberculosis and this falsifies the results.

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*** We have received a letter from Mr. P. Harold Jones denying that a dying patient has been at any time removed from Farleigh House and stating that "the number of beds in Farleigh House and Lymington House are not 49 but 32." The number of beds would seem to have been altered since the inspection of the homes by our Special Commissioner, to whom the late Mr. J. J. Jones supplied full particulars. Mr. Harold Jones is quite right in believing that our articles are not "actuated by any personal spite but solely by public motives," and no good purpose would be served by the publication of his letter. Our readers will see by an annotation published on another page that the suggested discussion of the matter by the Congress of the Royal Institute of Public Health at Folkestone has been adopted, and we can only reiterate our Special Commissioner's hope that such a discussion will have tangible results in regard to the public health.—ED. L.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

A Water Grievance in Bombay City.—The Continued High Mortality from Plague throughout India.

CERTAIN parts of Bombay city periodically suffer from a bad water-supply. Of the three lakes as sources for the requirements of the city the "Vehur" and "Tausa" are generally good but the smaller "Tulsi," which largely supplies the European quarter of Malabar Hill, seems to be annually subject to contamination. Lately the water has been so complained about that even a bath in it is said to be unpleasant and the stench given off while watering a garden is described as unbearable. When the level of the lake gets low it is said that liquid filth is carried off by the main. The filter beds are not ready and the project for connecting the mains with the other supplies has not been commenced.

The mortality from plague throughout India is improving but for the week ending May 28th there were 20,484 deaths. The Punjab recorded 18,086, as against 24,853 for the previous seven days; Bombay Presidency 798, as against 1086; United Provinces 652, as against 1069; Bengal 200, as against 215; Rajputana 166, as against 195; Kashmir 73, as against 74; Bombay city 129, as against 208; Calcutta 90, as against 134; and Karachi 62, as against 77. Since the above figures were issued the disease has further declined in Calcutta and in Bombay city.

I have drawn attention at different times to the absence of figures for Poona amongst the weekly published returns. It appears that this city has been somewhat severely attacked, over 3000 deaths having occurred since last September. Although this mortality is not so great as in previous outbreaks it compares unfavourably with other places, 1 in 40 of the population having fallen a victim to plague. From 1896 to the present time Poona has probably lost a larger proportion of its inhabitants than any other city.

June 10th.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

Medical Benevolent Society.

THE annual meeting of this society has recently been held, Mr. M. A. Messiter, the President, being in the chair. Dr. Edward Malins was appointed President, Dr. A. S. Underhill (West Bromwich) President-elect, and Mr. W. Flewitt (Bir- [illegible] W. Greene (Stratford-on- [illegible] ensuing year. The report [illegible] amount to £15,688 4*s.* 6*d.* [illegible] annuitants were on the books at the commencement of [illegible] e year. One died during the year and five new annuitants [illegible] re added to the list. The annual value of the grants ranged from £20 to £40 and the sum expended in this way was £755. The directors regretted that owing to the large number of annuitants they were unable to send them any donation at Christmas, as has been the case during the last few years. The total number of "benefit" members of the society at the end of the year was 411.

Dental Hospital.

A special appeal has now been issued to the public for the funds requisite for the provision of a very much needed new building for the Dental Hospital. The existing institution is the only one of its kind in the Midlands, there being no others nearer than London, Manchester, and Liverpool, and receives patients from a very large area. It is therefore only reasonable to hope that subscriptions may be rapidly forthcoming, seeing that the amount asked for is a very moderate sum, £8500 for building and £1500 for equipment. When the hospital was removed to its present position in the centre of the city and close to the site for the new building the number of patients received during the year was 5515. This was in 1882, and in 1902 the number was about double—viz., 11,112. A very large amount of conservative work is done as will be seen by the fact that in 1902 no less than 3046 teeth were saved by stopping, fixing crowns, &c. I am glad to see that the first list of subscriptions, which is appended to the appeal, amounts to about £3500 and I sincerely hope that a most deserving institution will soon obtain the funds required for its proper housing.

Open-air Treatment of Pulmonary Tuberculosis.

The board of guardians of the Aston union has been considering the advisability of providing some accommodation for treatment of this kind and has been inquiring into the success of the experiment which has already been made in this direction by the Birmingham board. The result of its inquiries has not been very enco [illegible] Birmingham board has erect [illegible] corrugated iron, lath, and plast [illegible] six patients. This only cost [illegible] expenditure has scarcely been justified by the results. It appears that the patients for whom the shelter was designed will not have anything to do with it save as a last resort and when their cases are so advanced as to render the success of the treatment very doubtful. And when they do enter the shelter they soon weary of the rigorous treatment and leave before they have had time to receive any real benefit. The shelter seldom contains the modest number of six for which it was designed. The result of these inquiries will probably be that the Aston board will refrain from undertaking any expenditure in this direction.

Health of Coventry.

The report of Dr. E. N. Snell, medical officer of health, shows a low rate of infantile mortality during 1903, the figure being 114 per 1000 births. The average rate for the past ten years has been 152. Only once previously was a lower figure recorded and that was in 1902 when there were 107 per 1000 births. The decline in numbers was due to the comparatively small prevalence of epidemic diarrhœa and the increase on the previous year was caused by deaths from measles and whooping-cough. The zymotic death-rate was 2·06 per 1000, the average for the previous ten years having been 1·9. The death-rate for scarlet fever, enteric fever, whooping-cough, and diarrhœa was below that for the rest of the country but the death-rate from measles and diphtheria, and especially from the former, was greatly in excess. The very extensive epidemic of measles with its heavy toll of 57 deaths was mainly instrumental in raising the zymotic death-rate for the year above that for the country generally. With regard to small-pox, the report states that it is now 30 years and more since the city was visited with so extensive an epidemic. In 1871, 166 deaths were due to it and in the following year there were 57 deaths. Since those years only two deaths were registered as due to this cause— [illegible] of the disease [illegible] r and in the [illegible] to assume alarming proportions. Dr. Snell points out that no epidemic of this disease need ever be considered as alarming if people would take the natural precaution of being revaccinated but in view of the neglect of such precaution an epidemic may easily become alarming when it is considered that not merely the life and death of citizens are at stake but also the prosperity of the city which might be depressed for a number of years as the result of a serious epidemic. Dr. Snell gives a number of details of the cases which occurred and thus shows that the infection was introduced afresh on several distinct occasions, and then through the wilful or negligent refusal to take advantage of the preventive means of vaccination amongst those who were exposed to the direct risk of infection the disease went on its way through entire families or amongst neighbours who came in contact with one another as intimately as relatives would do.

North Staffordshire Small-pox Hospital.

At a recent meeting of the board of this institution, held at Hanley, Dr. C. H. Phillips, the medical officer, reported that 47 cases had been admitted to the hospital during the first quarter of the year, including 15 from Newcastle-under-Lyme and 29 from Leek. There had been 21 patients discharged, two had died, and 24 remained under treatment. Seven other patients were announced from Leek. He strongly advocated the provision of an administrative block, as the staff was in danger through having to occupy bedrooms in the wards continuously. The board considered modified plans for the provision of permanent buildings at the hospital and ultimately adopted the original plans with slight alterations, the estimated cost of the buildings being £5900.

Margarine Prosecution.

The stipendiary magistrate for the Potteries had recently before him at Fenton a number of cases in which traders were charged with offences under the Sale of Food and Drugs and the Margarine Acts. John Richard Midgley of Leeds was summoned for selling as butter an article which was actually margarine containing only 3½ per cent. of butter and also with dealing with margarine wholesale without having the package in which it was inclosed branded. He was further charged with selling as Cheddar cheese an article which was really margarine cheese and also with selling margarine cheese in an open package which was not properly branded with the name of the article. After a lengthy hearing the stipendiary said that he was only sorry that he could not send the defendant to gaol. A more deliberate fraud he never had evidence of. The obtaining of money by this means was the worst and meanest kind of false pretence. It affected the poorest people and often ruined the retailer. He could not send the offender to prison and therefore he fined him the full penalty of £20 and costs in each of the six cases—£141 in all. Other cases arising out of this one were tried but as it appeared that the defendants had been more or less deceived by Midgley they were let off either with lighter fines or without fines at all.

General Hospital.

At the meeting of the committee held on June 24th Dr. T. Sydney Short was elected to the honorary physiciancy rendered vacant by the resignation of Dr. E. Rickards, to which I alluded in my last letter. As Dr. Short has held the position of assistant physician for a number of years a vacancy now arises in that post. As this has been fully anticipated two candidates are already in the field—viz., Dr. S. Herbert Perry who is one of the casualty physicians to the hospital, and Dr. A. Stanley Barnes who is pathologist to the Queen's Hospital. Both of these gentlemen are past students of the Birmingham School and are well known in the city.

June 28th.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

The University of Manchester.

IT was announced on June 27th that the Royal Assent had been given to the Victoria University of Manchester Act, 1904. By this measure the Owens College becomes incorporated in the University and now ceases to exist "as a separate corporation." All the property (real and personal) and all the rights, powers, and privileges of the College are invested in the University "and applied to the objects and purposes for which the University is incorporated." The arms of the College are adopted by the University but the buildings now existing will continue to be known by the old name of "the Owens College," while the professors and other members of the teaching staff will hold "as nearly as is practicable the same offices and places" in the University as they have held in the College. The rights of the College as to the appointment or nomination of members of governing bodies of educational, charitable, or other institutions are transferred to the Council of the University, and any such rights of the Senate of the College pass over to the Senate of the University; and all bequests, gifts, or trusts in favour of the College are to have effect as if the University were named and not the College. The Duke of Devonshire now becomes the President of the University of Manchester and is empowered to preside at meetings and to confer degrees in the absence of the Chancellor (Earl Spencer).

The New Royal Infirmary.

A meeting of the board of management of the Manchester Royal Infirmary was held yesterday under the chairmanship of Mr. W. Cobbett. It appears that the building committee has examined the plans for the Stanley-grove building with a view to some modification and the architects have made certain suggestions to the committee which have been approved and embodied in a report. This report has been approved by the board and will be considered by the medical board. The changes suggested have not yet been made public but they are intended to reduce the cost without diminishing the accommodation of the new infirmary or affecting its efficiency. The Stanley-grove site is to be cleared within four months.

Dangers of Electricity.

As long as it is under control we all welcome the powerful agent that science has made available by putting electricity into harness. But the conditions necessary for its safe use are so delicate and therefore so easily disturbed that the greatest possible care will always have to be taken if accidents are to be avoided. On June 25th an illustration of this occurred at the Newland collieries, Normanton. Three men were working with an electric cutter "when an electric coil fused and an explosion occurred." They were all seriously burned and removed to the Clayton Hospital, Wakefield, in a critical condition. One would think that the electrocutions from "live rails" that we read of from time to time might be, and therefore ought to be, prevented by some mode of protection and that these rails ought not to be left open to catch trespassers who, even if they trespass, will scarcely be thought worthy of death. Then, too, there are very many people who live in dread, not altogether foolish, from the increasing dangers of the streets. They fear the network of death-dealing wires hanging over their heads like the sword of Damocles, to say nothing of the electric cars themselves which, as a rule, certainly keep to their own tracks. It is perhaps not easy to see how all these dangers are to be avoided but it is a matter to which men of science might well turn their attention with some earnestness.

Cheshire Hospital Scheme.

On June 24th at a meeting of the Mid-Cheshire joint hospital committee it was stated that in order to avoid delay in the erection of the joint hospital the Local Government Board sanctioned the borrowing of £13,885 to cover the cost of the building. The district includes the areas of Northwich rural and urban districts and the urban districts also of Winsford and Middlewich. The Cheshire county council is to borrow the money which is to be repaid by the joint authority minus the amount contributed by the council.

The Owens College Extensions.

The late Dr. Schunk, who was well known as a scientific chemist, left a large sum to the Owens College for the promotion of research and also his extensive and valuable library. As the result of this bequest the Schunk Laboratory will be opened early next month by Dr. W. H. Perkin, sen. It comprises a basement and a large laboratory on the first floor, with a balance room attached, and a library on the top storey which is to be finished most artistically. The laboratory proper is a spacious apartment overlooking Burlington-street. An extension of the inorganic laboratories and the metallurgical laboratory was decided upon some time since in honour of the centenary of the announcement of Dalton's atomic theory. During the centenary celebrations Professor van 'tHoff unveiled a memorial stone in the Dalton Laboratory. Although the

development of ch
has extended into
medical student its progress will always be watched with sympathetic interest by the medical profession and with the feeling, moreover, that at any time new powers may be revealed that will strengthen the hands of those whose work it is to combat disease and suffering.

Port Sanitary Authority.

It is difficult for those not specially interested in the docks and the shipping to feel that Manchester is a seaport notwithstanding the fact that the annual report just issued by the medical officer, Dr. A. M. N. Pringle, is the seventh since the formation of the port sanitary authority in 1897. As the trade of the port gradually increases so do the cases of sickness that have to be investigated. In 1897 there were 16, in 1898 65, and in 1901 89, having gradually increased, but in 1902 there was a considerable rise to 144 while last year there were 124 cases. As Dr. Pringle says, with this progressive increase in the number of cases there is increasing liability to the importation of infectious disease not only from this cause but also from the increased area from which infection may come. He considers that the time is opportune "for the consideration of the question of international notification of infectious disease." At present the daily papers supply all the information available. He would have at least plague, small-pox, and cholera notified internationally. Last year there was only one case of small-pox, so that the ship-imported small-pox cannot rival that carried about the country by tramps. There were 2977 inspections in 1903 as compared with 2965 in 1902. Of the vessels inspected 1311 were British steamships, 721 were British sailing ships, and 39 were foreign sailing ships.

June 28th.

WALES AND WESTERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENTS.)

British Medical Association.

AT the annual meeting of the Worcestershire and Herefordshire branch of the British Medical Association held at Hereford on June 24th Dr. J. B. Fitzsimons of Hereford was elected president and Mr. T. Preston Gostling of Worcester president-elect. Dr. George W. Crowe of Worcester, who is the joint representative on the council of the Association of this branch and the Gloucestershire branch, was re-elected secretary, an office which he has held for many years. In his presidential address Dr. Fitzsimons dealt with the influence of hospital isolation upon scarlet fever in the city of Hereford. It appears that cases of scarlet fever have been notified in Hereford for the past 20 years and compulsorily so for 17 years. The isolation hospital has been available for ten years. In the ten years prior to the establishment of the hospital there was a yearly average of 1·44 per 1000 of the population attacked with scarlet fever with a case mortality of 4·1 per cent. and a death-rate of 0 06 per 1000 of the population. In the first five years after the opening of the hospital a yearly average of 5·8 per 1000 were attacked, 33 per cent. of these were removed to the hospital, there was a case mortality for the whole town of 4·1 per cent., and a death-rate of 0·24 per 1000. In the second five years, when 68 per cent. of the cases reported were isolated in the hospital, there was an attack rate of 1·8 per 1000, a case mortality of 1 per cent., and a death-rate of 0·016 per 1000 of the entire population. In the first five hospital years there was an average yearly death-rate among children under five years of age of 1·7 per 100 of the children living at that age group, while in the second five hospital years there were no deaths recorded of children below five years of age. Dr. Fitzsimons, who is the medical superintendent of the Hereford Isolation Hospital, stated that he discharged most patients at the end of six weeks from the commencement of the disease and he had only had two "return" cases. He thought that in certain instances this period of detention might be shortened. In the discussion which followed the reading of the address several speakers emphasised the important part played by nasal and aural discharges in spreading the infection.

The Midwives Act.

The medical officer of health of Cardiff (Dr. E. Walford) has given a great deal of careful thought to the administration of the Midwives Act. The borough council as the local who was appointed executive officer, has upon more than one occasion suggested the establishment in Cardiff of a training centre for midwives and it appears to be likely that his suggestion will be carried out. The council of the Cardiff University College has expressed its willingness to establish a course of lectures for midwives provided certain financial assistance can be relied upon. The technical instruction committee of the borough of Cardiff has promised to contribute £50 yearly towards the scheme and the education committee of the Glamorgan county council has recently been approached on the subject by a deputation from the Cardiff division of the British Medical Association. Dr. E. J. Maclean told the committee that of the 40,000 children born annually in the six southern counties of Wales 30,000 were born in Glamorganshire and he said it was estimated that 19,500 labours in that county were attended by 1000 women acting as midwives. He further pointed out that the accidents of childbirth and the number of cases of puerperal septic diseases were very considerably higher in the county of Glamorgan than in other parts of England and Wales.

Bangor University College.

It is announced that £42,000 have already been subscribed towards the fund for providing permanent buildings at Bangor for the University of Wales. The total amount required is estimated at £175,000.

West Wales Sanatorium.

As the result of a conference between representatives of the county councils of Carmarthen, Cardigan, and Pembroke and Sir John Williams and other members of the West Wales branch of the National Association for the Prevention of Consumption and other Forms of Tuberculosis a recommendation is to be made to the county councils named to contribute an aggregate sum of £3000 towards the cost of erecting a sanatorium near Llanybyther in Carmarthenshire.

New Waterworks at Street.

The completion of waterworks for the supply of the town of Street in Somerset was formally recognised on June 18th. The town has a population of about 4000 persons and the cost of the undertaking was £25,000. Water is brought from the Mendip Hills and is stored in a low level and a high level reservoir, being raised to the latter by suitable pumping machinery.

A Small-pox Hospital for Kingswood.

At a meeting of the Kingswood (Bristol) urban council held on June 20th it was reported that a case of small-pox had occurred in the district. The council decided on the immediate erection of an iron hospital containing six beds for small-pox cases at an estimated cost of about £400.

Medical Cricket Match at Bristol.

The annual cricket match between members of the staff and students of the Royal Infirmary and General Hospital was played at the Gloucestershire county cricket ground, Bristol, on June 23rd and resulted in a win for the former team by 59 runs.

June 27th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENT.)

Alcoholism and Insanity.

IN submitting his annual report at the meeting of the directors of Dundee Royal Lunatic Asylum Dr. W. Tuach stated that in 20 cases admitted to the Royal Asylum it was demonstrated that the patients were hereditarily predisposed to mental disease, and next to heredity as a causative agent had to be put intemperance in drink, this having been shown to be the exciting cause in ten cases. To those whose work lay among the insane the rôle which intemperance in drink as an exciting cause of mental disease played in the filling of asylums was becoming more and more evident each year. The numbers admitted from this cause were increasing steadily from year to year. Drink was a black spot in our social life. It was very difficult to say whether a man was insane because he drank to excess or whether he drank because he was insane.

An Aberdeen Physician in the Far East.

The Hong-Kong papers contain eulogistic notices of the had been proved in animals Professor Jacob proceeded to make use of it in the human subject. The idea of local treatment of bronchial and pulmonary diseases was, he said, of ancient date, but inhalation was the only means that had hitherto been found practicable for the administration of medicines with this object and it was known that fluids administered in this manner did not make their way to the lungs, whereas when injected they were brought into direct contact with the diseased part. The procedure was not at all complicated and was quite within the power of any medical man acquainted with laryngoscopy. The larynx and trachea were first anæsthetised with cocaine and anæsthesin, after which a small caoutchouc tube was passed through the mouth, the larynx, and the trachea. The patient was then placed so that his head was in a reclining position and some grammes of the solution were injected with a small syringe. Injections of tuberculin and creasote caused disappearance of the tubercle bacilli in from four to eight weeks. A febrile reaction occurred after the use of tuberculin and Professor Jacob was of opinion that the injection method, apart from its therapeutical advantages, might also be used for the tuberculin test to ascertain in doubtful cases whether a case was one of tuberculosis or not and which of the lungs was affected. Up to the present time five patients had been treated by injection; the results were described as satisfactory so that the treatment was to be continued on a larger scale. The discussion of the paper was adjourned to the next meeting of the society.

Professor Koch.

Professor Robert Koch, after an absence of one and a half years, returned to Berlin on June 11th. The rumour that he had intended to leave Berlin altogether and to enter the British colonial service was unfounded, as I have already stated in THE LANCET of Feb. 27th, 1904, p. 617. It will be remembered that he went to British South Africa at the request of the colonial authorities for the purpose of carrying out investigations on Texas fever and on horse sickness which are so prevalent in that part of the world. The medical profession will be glad to learn that Professor Koch's health is as good as ever and that he was able at once to resume his duties as chief of the Royal Institution for Infectious Disease. Since his return he has been interviewed by a medical man belonging to the staff of the *Lokal Anzeiger*, an important Berlin daily paper, and he is said to be very well satisfied with the results of his stay in South Africa. He told his interviewer that his work lay almost exclusively in Rhodesia and that he had discovered that the cattle suffered neither from rinderpest nor from Texas fever but from a specific disease which had long been prevalent on the East African coast and had probably been imported into Rhodesia by cattle brought from the coast. Professor Koch said that he had recognised the disease seven years ago on the coast of German East Africa, that it had been termed by him "coast fever," and that he had succeeded in finding a method of immunising cattle against it. He had also made an investigation of the so-called "horse sickness," from which about 90 per cent. of the horses died in some districts and which had hitherto resisted all curative and immunising methods. Professor Koch is said to have devised means of immunisation which worked satisfactorily in the laboratory but must, of course, be tried in cases of natural infection; the laboratory experiments will be continued in Berlin. It would be of interest to know Professor Koch's opinion as to Professor Behring's theory on the subject of tuberculosis. Professor Behring's views were published during Professor Koch's absence and I learn from a trustworthy source that the latter has no intention of renewing the discussion because his belief in the essential difference between bovine and human tuberculosis remains unaltered.

Poisoning by Acetone.

Dr. Cossmann, surgeon to the Duisburg Hospital, writing to the *Munchener Medicinische Wochenschrift*, reports a case of poisoning by acetone which had been used as a solvent of celluloid in the making of a surgical appliance. The patient suffered from tuberculosis of the hip-joint and a sort of splint had been applied consisting in part of gauze bandages moistened with the acetone solution. A few hours later the patient passed into a state resembling diabetic coma, associated with somnolence, difficult respiration, and irregular pulse. Most of the symptoms disappeared after the removal of the splint and the use of artificial respiration, hot compresses, and injections of saline solution, but the somnolence and unconsciousness continued for about 24 hours. The urine and the vomited matter contained acetone and there was a strong smell of that substance in the breath. Obviously the acetone must have been absorbed through the skin. Attempts to poison a dog by applying an acetone dressing were, however, unsuccessful.

June 28th.

Medical News.

UNIVERSITY OF CAMBRIDGE.—The order of the first examination at Cambridge in tropical medicine and hygiene to be held in August next is as follows: Tuesday, August 9th, from 9 A.M. to 12 noon, in the New Medical Buildings (Cambridge), paper [illegible]eriology, and from 2 to 6 P.M., in the Nc [illegible] oral and practical; Wednesday, August 10th, from 9 A.M. to 12 noon, in the New Medical Buildings, paper in medicine and hygiene, and from 2 to 6 P.M., in the New Medical Buildings, oral and practical; and on Thursday, August 11th, beginning at 3 P.M. punctually, in the wards of the Seamen's Hospital Society, Branch Hospital, Royal Albert Dock, London, E., clinical medicine and surgery.—The following degrees were conferred on June 21st:—

Bachelor of Medicine.—J. E. Pellow, St. John's; E. A. A. Beck, Clare; W. H. Hills, Pembroke; J. S. Cooper, Jesus; G. S. Colt and J. B. Dunlop, Sidney-Sussex; and A. R. Brailey, Downing.

Bachelor of Surgery.—A. W. D. Coventon, W. L Cripps, H. M. Davies, E. Harrison, and R. H. Robbins, Trinity; D. H. Fraser, Caius; J. S. Cooper, J. Goss, and B. H. Stewart, Jesus; R. A. Clapham and R. O. Lee, Emmanuel; and G. H. Colt and J. B. Dunlop, Sidney-Sussex.

During the year thus closed the numbers of medical and surgical degrees conferred are given as follows: B.C., 80; M.B., 72; M.C., 3; and M.D., 19.

At the third examination for medical and surgical degrees, Easter term, the following candidates were successful:—

Part II. Surgery, Midwifery, and Medicine.—A. E. Barclay, M.A., Christ's; H. J. D. Birkett, B.A., Trinity; E. M. Brown, B.A., and S. Child, B.A., Pembroke; R. A. Clapham, B.A., Emmanuel; G. H. Colt, B.A., Sidney Sussex; A. W. D. Coventon, B.A., W. L. Cripps, B.A., H. M. Davies, B.A., and R. G. Elwell, B.A., Trinity; H. Falk, B.A., King's; G. R. Footner, B.A., Pembroke; D. H. Fraser, B.A., Caius; J. Goss, B.A., Jesus; C. F. Hadfield, M.A., and Everard Harrison, B.A., Trinity; W. Hastings, B.A., Christ's; T. G. M. Hine, M.A., and H. F. Horne, B.A., King's; W. E. Hume, B.A., Pembroke; K. H. A. Kellie, B.A., Caius; J. Lambert, B.A., Downing; R. O. Lee, B.A., Emmanuel; T. C. Lucas, B.A., Clare; S. M. Mackenzie, B.A., Trinity; C. W. P. Moffatt, B.A., Clare; W. M. Mollison, B.A., King's; A. R. Moore, B.A., Caius; R. F. Moore, B.A., Christ's; W. V. Naish, M.A., Emmanuel; R. G. Nothwanger, M.A., and C. T. MacL. Plowright, B.A., St. John's; C. A. W. Pope, B.A., H. Rischbeith, M.A., and R. H. Robbins, B.A., Trinity; B. H. Stewart, B A., Jesus; C. Stiebel, Trinity Hall; G. A. Ticehurst, B.A., St. John's; R. E. Whitting, B.A., King's; and R. A. Worthington, B.A., Clare.

TRINITY COLLEGE, DUBLIN.—At examinations held at Trinity term the following candidates were successful:—

PREVIOUS MEDICAL EXAMINATION.

Anatomy and Institutes [illegible] is R. Coppinger, Robert E. [illegible] ton, John W. Tomb, Charle [illegible] G. S. Gregg, Gustav W. Thc [illegible] s G. Sherlock, Reginald Holmes, Thomas L. de Courcey, Henry D. Drennan, Dudley S. Torrens, Edward C. Stoney, Herbert J. Wright, Malcolm K. Acheson, William Hutchison, Robert B. Jackson, George E. G. Vickery, Francis Casement, Francis W. H. Bigley, Ernest Jameson, Ernest D. Caddell, Edward Evans, and William A. Nicholson.

Physics and Chemistry.—Richard P. Hadden, Charles F. F. Davies, William R. G. Atkins, Ernest C. Lambkin, Dixie P. Clement, Johannes C. Pretorius, Robert V. Dixon, James F. Clarke, Douglas M. Moffatt, Robert G. Orr, William E. Hopkins, Frederick A. Anderson, Gerald Mecredy, Henry H. Ormsby, Samuel F. A. Charles, Norman Jewell, Charles W. Laird, James D. Murphy, John L. Phibbs, Albert V. Richardson, Harold S. Sugars, and Richard J. Attridge.

Botany and Zoology.—Ralph T. Brooks, Arthur H. Land, Ernest C. Lambkin, Charles F. F. Davies, Richard P. Hadden, Albert J. Stals, William E. Hopkins, Charles W. Laird, Charles G. S. Baronsfeather, Henry R. Kenny, Johannes C. Pretorius, Dixie P. Clement, Frank N. Smartt, Robert E. T. Tatlow, Douglas M. Moffatt, John L. Phibbs, William R. G. Atkins, Thomas P. S. Eves, William Knapp, George H. Stack, James Brereton-Barry, Gordon A. Jackson, Norman Jewell, Alfred H. Smith, Alexander S. Winder, James Beckett, Derrick W. Knight, John T. M'Donnell, Kenneth Smith, Cecil Grene, and Frederick C. Newland.

DIPLOMA IN PUBLIC HEALTH.

Parts I. and II.—Alexander H. Marks.

ALLEGED IMPROPER TREATMENT OF CHILDREN UNDER THE POOR-LAW.—At a recent meeting of the Fylde board of guardians Miss Johnson, a new member of the board, asked for an inquiry respecting certain children attached to the union who are being sent to school while [illegible] also [illegible] rom [illegible] It is [illegible] nce [illegible] hile [illegible] iiry [illegible] on- [illegible] en. [illegible]

Royal Army Medical Corps Militia.—Colonel Sir J. R. A. Clark, Bart., C.B., and the officers of the Royal Army Medical Corps Militia dined together on June 21st at the Trocadéro Restaurant, London. The company included some distinguished guests and to the right of the chair were seated Director-General Sir W. Taylor, K.C.B., Major M. O'Connor, Colonel A. T. Sloggett, C.M.G., Captain A. H. Benson, Colonel H. B. Williams, Major T. McCulloch, Captain E. W. Bartholomew, and Lieutenant-Colonel E. M. Wilson, C.B., C.M.G. To the left of the chair were seated Sir E. Cooper Perry, Captain J. Tracy Simpson, Colonel H. E. R. James, Lieutenant J. C. Furness, Lieutenant-Colonel M. W. Russell, Major Thurston, Captain S. G. McAllum, and Lieutenant-Colonel G. Robinson. The toast list consisted of the following: "The King," "The Queen and the Princess of Wales and the rest of the Royal Family," and "The Guests." These were simply given from [illegible] band in each case play- [illegible] the absence of the usual [illegible] l their hosts passed the time most pleasantly and the dinner was in every way a great success.

Prize Day at St. Thomas's Hospital.—Prize Day at St. Thomas's Hospital took place on June 24th and attracted a large and fashionable gathering which assembled in the Governors' Hall of the hospital under the chairmanship of the treasurer, Mr. J. G. Wainwright, J.P., who in the course of his opening remarks said that the new nurses' home which was intended to accommodate 185 nurses was rapidly approaching completion. He also alluded to the fact that two children's wards had been added to the hospital. The out-patient department demanded increased accommodation and he hoped that that would soon be provided for by a well-matured scheme. After the prizes had been distributed by Sir Thomas Barlow he proceeded to give to the students most excellent advice. He commented particularly on the value of *vivâ-voce* examinations as a means of getting rid of the self-consciousness which sometimes is a hindrance to young medical men. He urged the importance of careful diagnosis and recommended the students to remember that the smallest details for the relief of pain were worthy of thought and study. After Sir Thomas Barlow had received and acknowledged a cordial vote of thanks the company dispersed into the various departments of the hospital and school and were entertained at a garden party held on the terrace.

National Health Society.—Dr. George Newman, medical officer of health of the metropolitan borough of Finsbury, was one of the principal speakers at the meeting of the National Health Society at the Mansion House on June 28th. In proposing a motion approving of the work of the society Dr. Newman drew attention to the increase in the number of industries which afforded employment for women. He said that there were now employed in the county of London some 720,000 women in various occupations. About 240,000 of t [illegible] at home and the remainder [illegible] places. The above create [illegible] need—for the existence of such societies as the National Health Society and he insisted on the fact that the rules of health must be taught in the homes of the people by the society. Sir James Crichton-Browne, who seconded a vote of thanks to Princess Christian for being present, observed that the public had awoke to the fact that the stamina of the people was not all that it ought to be. There was an undue proportion of sickly children and the superabundance of degeneration and infirmity afforded a large field for the labours of the National Health Society, whilst there was such lamentable ignorance among the poor in connexion with sanitary matters. It was against physiological and hygienic ignorance that the society directed its energies. Sir William S. Church [illegible] ledge of the populatic [illegible] bring home to the mothers of the people the few simple rules on which was founded all true sanitation. The meeting was held in the Egyptian Hall of the Mansion House and was principally attended by ladies.

The Gaskell Park, St. Helens, presented to the public by Surgeon-Lieutenant-Colonel Gaskell, V.D., J.P., was opened by the donor on June 23rd in the presence of the mayor and corporation.

A Medical Yachtsman.—The victory of the *Valdora* in the Heligoland yacht race is very popular among West of England yachtsmen, the owner of the *Valdora* being Dr. J. G. Douglas Kerr of Bath.

The late Dr E. Long Fox.—The first of the annual lectures which are to be delivered in memory of the late Dr. E Long Fox of Clifton will be delivered in November next by Dr. John Beddoe.

Death of a Centenarian.—Mrs. Mary Buckingham Edgcome, widow of the late Dr. James Edgcome of Brunswick-square, London, died at Surbiton, Surrey, on June 21st. She was born in Cornwall on June 12th, 1804, and for many years resided at Surbiton.

Literary Intelligence.—A third and considerably enlarged edition of Dr. Ralph W. Leftwich's "Index of Symptoms" will be published by Messrs. Smith, Elder, and Co. immediately. The last edition had a somewhat bald appearance from the multitude of unbroken columns. This has been remedied by breaking up the last chapter on Methods of Diagnosis and inserting its different parts under their respective headings. Dr. Leftwich has also added much similar matter, besides making the work more complete, and he has endeavoured in the new edition to meet the requirements of the medical student.

South African Civil Surgeons' Dinner.—The South African Civil Surgeons' dinner took place on June 28th at the Hotel Cecil, London, Mr. G. H. Makins, C B., being in the chair. There was a good attendance and amongst those present were Mr. J. Tweedy (President of the Royal College of Surgeons of England), Sir William Taylor, K.C.B., Sir William D. Wilson, K.C.M.G., Mr. W. Watson Cheyne, C.B., Mr. C. T. Dent, Surgeon-General A. H. Keogh, C.B., Mr. A. A. Bowlby, C.M.G., Dr. H. H. Tooth, C.M.G., Mr. C. Stonham, C.M.G., Mr. F. C. Wallis, Mr. G. Stoker, C.M.G., and Mr. C. G. Watson. After the usual toasts had been honoured Mr. Makins proposed the toast of "The Imperial Forces." He said that the navy let the public know very little about how or in what way changes were carried out on board ship. The "man in the street," on the other hand, heard a good deal about the army and the changes which were going on daily therein, but he (Mr. Makins) supposed that they must put their trust in Providence and hope that things would come all right. The toast was responded to by Sir William Wilson, who was principal medical officer in South Africa during the war. He said that he had always been in favour of conferring rank on the civil surgeons after a necessary period of probation. The health of "The Chairman" was proposed by Sir William Taylor and suitably acknowledged. Everyone was grateful to Mr. Watson for his successful efforts in getting up the dinner.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Registration of Nurses.

The Government has appointed the following Select Committee to consider the expediency of providing for the registration of nurses Mr. Robert Ambrose, Major Bagot, Sir Michael Foster, Mr. Arthur Henderson, Mr. Lyell, Mr. Malcolm, Viscount Morpeth, Mr. Pierpoint, Sir John Stirling-Maxwell, Mr. Tennant, and Sir John Batty Tuke.

Bills Abandoned.

[illegible] the end of the session is to be found [illegible] this week. Among the Bills dropped [illegible] r. R. Farquharson's Nurses Bill, Sir Herbert Maxwell's Sale of Whisky Bill, Sir Charles Dilke's Shops Bill, Mr. Broadhurst's Vaccination Bill, and Mr. Channing's Vaccination Prosecutions Bill.

HOUSE OF LORDS.

FRIDAY, JUNE 24TH.

Beri-beri among Chinese Coolies.

The Marquis of **RIPON** made reference to what occurred in the House of Commons on Wednesday, when Dr. C. F. Hutchinson attempted to discuss the question of the existence of beri-beri among the Chinese coolies in South Africa, and he asked whether the Government had yet received official information.—The Marquis of **LANSDOWNE** replied in the negative. He added that it seemed clear that the case was one in which extraordinary precautions of some kind would be called for and he had no doubt that they would learn in due course [illegible] ng done to cope with the outbreak. The Govern- [illegible] are that this disease was a dangerous one and it [illegible] pains should be spared to prevent its spreading. —Earl **CADOGAN**, speaking as an ex-Lord Lieutenant of Ireland, mentioned an outbreak of this disease which had occurred in a prison hospital in Dublin. Under the regulations it would not have been possible to deal with the emergency as rapidly as he wished. He, however, kept the matter in his own hands, transferring the patients to a disused prison and ordering the hospital to be cleansed. One or two fatal cases occurred but the severity of the disease was mitigated in a very short time and he thought that if this outbreak in South Africa was promptly and vigorously combated it would probably not be so severe and dangerous as seemed to be feared.

HOUSE OF COMMONS.

WEDNESDAY, JUNE 22ND.

Beri-beri among Chinese Coolies.

Dr. **HUTCHINSON** asked the Secretary of State for the Colonies whether his attention had been called to the outbreak of beri-beri among the Chinese coolies who had recently arrived in South Africa; whether those who had developed the disease had been actually landed; whether those who had been exposed on board ship to infection had yet been sent up country to the compounds; and whether, having regard to the intensely infectious and dangerous character of this disease, from which South Africa was at present free, he would tell the House what steps had been taken to prevent the spreading of the disease in the colony.—Mr. **LYTTELTON** replied: I have received no report from Lord Milner on this subject. I have telegraphed but have received no reply. I have every confidence that, judging from the admirably efficient measures taken for dealing with the outbreak of plague, every precaution will be taken.—Dr. **HUTCHINSON** considered that this reply was extremely unsatisfactory and he asked leave to move the adjournment of the House "to call attention to a matter of urgent public importance, the imminent danger which arises from the introduction of a new highly infectious and fatal disease known as beri-beri into South Africa."—The Deputy Speaker (Mr. J. W. **LOWTHER**) held, however, that the question could not be discussed on a motion for the adjournment as it was covered, in his opinion, by one of the so-called "blocking motions" on the papers of the House.

Sore-throat in Glasgow.

Mr. **WEIR** asked the Secretary for Scotland whether he was aware that the epidemic of sore-throat which recently broke out at the Belvidere Hospital, Glasgow, was, like that at Woking last autumn and at Finchley early this year, attributable to the milk taken from cows out of health; and whether, seeing that Dr. A. K. Chalmers, the medical officer of health of Glasgow, stated that the outbreak in that city was due to teat eruption in the stock at the farm from which the milk supply was obtained, he would consider the expediency of introducing at an early date such legislation as might be necessary to insure the occasional examination by a veterinary surgeon of all cows kept for the purposes of a public dairy.—Mr. **GRAHAM MURRAY** said: I am informed by the Local Government Board for Scotland that it has Dr. Chalmers's report under consideration. As regards prospective legislation I can add nothing to the answer given to the question addressed by the honourable Member on June 13th to the President of the Local Government Board, but I may point out that under the existing law a local authority in Scotland is entitled to procure a report by a veterinary surgeon on the animals in any dairy from which the medical officer has evidence that infectious disease is likely to be spread.

Sanitary Condition of China Stations.

Sir **SEYMOUR KING** asked the Secretary of State for India whether the attention of the military authorities in India had been called to the insanitary state of the quarters and barracks of British officers and native ranks of the [illegible] a at Shan-hai-kwan, Tientsin, and [illegible] aware that at Shan-hai-kwan near [illegible] some time or other laid up with fever, dysentery, or diarrhœa, the quarters of both officers and men being in an old yamen the inclosure of which was the old bed of the river Shi-to and liable to be flooded; whether other foreign contingents at Shan-hai-kwan were well housed in forts captured by the British force in 1900 and at Tientsin had superior accommodation while those of our own troops had been reported on as in a disgraceful condition; and whether he would call for a report on the sanitary condition of the China stations and order that measures should be taken to secure healthy quarters for our troops.—Mr. **ARNOLD-FORSTER** replied: Money has been taken in Army Estimates for the improvement of the accommodation at Peking and Shan-hai-kwan but there is no information at the War Office to show the exact progress made with the work. Further, no recent information as to the health of the troops has been received at the War Office as the returns are sent to army headquarters in India but the question is one of importance as it concerns the health of officers and men and I will cause further inquiries to be made.

Tuberculosis in Ireland.

Sir **MICHAEL FOSTER** asked the Chief Secretary to the Lord Lieutenant of Ireland whether the Local Government Board for Ireland was taking the necessary steps towards remedying the insanitary conditions of the Clonmel district to which the prevalence of tuberculosis in that district had been attributed.—Mr. **WYNDHAM** replied: The Board's medical inspector directed attention in 1901 and 1902 to the insanitary condition of this district and the Board impressed upon the district council the duty of taking all such steps as were necessary to put the district in a satisfactory sanitary condition. The inspector will make another report at an early date and this report when received will be communicated to the local authority. The Board cannot compel the [illegible] action in the matter unless in pursuance of [illegible] in pursuance of the fifteenth section of the [illegible] Act, 1896. No such complaint has yet been made to the Board.

The Alleged Ill-treatment of a Child.

Sir **WALTER FOSTER** asked the President of the Local Government Board whether his attention had been called to the case of the child, named Albert Algage, who was returned to the Westminster union from the St. Giles's receiving home with marks of injury on the face and limbs; whether he had received evidence to satisfy him that the injuries were not due to punishment or to want of proper care and supervision; and, if not, whether he would order an inquiry into the treatment of the child while an inmate of the receiving home.—Mr. **LONG** said: I am aware of this case and the inspector of the district has made investigation with regard to it. As a result he reports that the bruises were not in his opinion due to punishment or to want of proper care and supervision and that in all probability they were caused by the child himself. I do not think that any further inquiry is needed.

THURSDAY, JUNE 23RD.

Small-pox in Staffordshire.

Mr. **COGHILL** asked the President of the Local Government Board whether his attention had been called to the renewed outbreak of small-pox in North Staffordshire; and whether he could state what provision had been made for hospital accommodation by the local authorities and what steps the Local Government Board proposed to take to deal with the epidemic.—Mr. **LONG** said: I am aware that an outbreak of small-pox has occurred in the Leek urban district and in connexion with it I have sent a medical inspector to visit the locality and have received a report from him on the subject. Leek is included in the district of the North Staffordshire joint small-pox hospital board and up to the date of the inspector's report at the end of last week all the cases of small-pox had been removed to the temporary hospital provided by that board. Further and better hospital accommodation seems to be required. I have already sanctioned the borrowing of money by the hospital board for this purpose. I am pressing upon the board to proceed with the works and also to consider whether even further provision may not be needed.

A Medical Officer and Workhouse Dietary.

Mr. **LOUGH** asked the President of the Local Government Board whether his attention had been drawn to the proceedings of the medical officer of the Docking (Norfolk) board of guardians who had declined to accept the decision of the board in favour of the withdrawa [illegible] se and to the fact that the medic [illegible] pints of beer a day to be given [illegible] l; and, if so, under what authority the medical officer had acted and whether the Board proposed to take any, and, if any, what, steps in the matter.—Mr. **LONG** replied: My attention has been drawn to the case referred to. One of the regulations in force in the Docking union requires that the medical officer shall prescribe proper dietaries for the sick inmates of the workhouse. It is, however, provided that no allowance of fermented or spirituous liquor given by his direction to a sick inmate shall be continued for more than eight days, unless before the expiration of that period it is renewed for a further period not exceeding eight days by his direction in writing. Subject to the regulations in force it is for the medical officer to determine the dietary of the sick inmates and I could not undertake to interfere with his discretion in the matter.

Medical Appointments in Harris.

Mr. **WEIR** asked the Secretary for Scotland whether he was aware that the Return (Parochial Medical Officers, Scotland) was inaccurate in stating that the post of medical officer of Harris was vacant only once during the seven years prior to 1903, inasmuch as the post of medical officer was vacant on two occasions for the North Harris division and also on two occasions for the South Harris division; and whether in view of the fact that the return contained other inaccuracies of a similar nature he would consider the expediency of having an amended return issued.—Mr. **GRAHAM MURRAY** replied: The Local [illegible] d has communicated with the inspector c [illegible] the information given in the return and [illegible] ows, it is not correct that the resident medical officership had been vacant since July 20th, 1896, in the northern division of the parish twice and also in the southern division of the parish twice. If the honourable Member will give the dates when the vacancies are said to have occurred the Local Government Board will make further inquiries.

MONDAY, JUNE 27TH.

A Ballinasloe Asylum Appointment.

Mr. **LONSDALE** asked the Chief Secretary to the Lord Lieutenant of Ireland whether he was aware that Dr. P. Kerley, who had been elected by the Ballinasloe Asylum committee to the position of second assistant medical officer, was married; and whether, seeing that the rules of the Privy Council governing such appointments provided that the second assistant medical officer must be unmarried, he proposed to take any, and if any what, action in the matter.—Mr. **WYNDHAM** said: Yes, sir. The rule prohibiting a married man from being appointed to the position of assistant medical officer of a [illegible] universal application throughout the United [illegible] in an Order of the Lord Lieutenant in Cou [illegible] I am advised that it would be most undesir [illegible] public service to depart from the rule and th [illegible] no power to dispense with its observance.

Fees of Public Vaccinators.

Mr. **RUNCIMAN** asked the President of the Local Government Board whether he had received any protests against the amount of minimum fees payable to public vaccinators under the Vaccination Order of the Local Government Board of 1898; whether he was aware that in the Gateshead union there were, during the four years previous to the passing of the Act, 6378 primary and 230 revaccinations by public vaccinators, in respect to which fees were paid amounting to £753 12*s.* 6*d.*

and during the four years since the passing of the Act there had been [illegible]

TUESDAY, JUNE 28TH.

Beri-beri.

Several questions were put to the Secretary of State for the Colonies in regard to the outbreak of beri-beri among the Chinese coolies in [illegible] replied that although he had [illegible] official information no reply [illegible] it would be found that there [illegible]

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

[illegible] R.C.S., L.S.A., has been re-appointed [illegible] by the Bradford-on-Avon (Wiltshire) [illegible]

[illegible] P., F.R.C.S. Edin., has been appointed [illegible]

[illegible] ham.

SIM[illegible] Edin., has been [illegible] the Canning Town [illegible]

WI[illegible] ted Examiner in [illegible]

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

ARMY MEDICA[illegible] less than 30 Comm[illegible]

AYR COUNT[illegible] £70 per annum, [illegible] Salary [illegible]

[illegible] R.S.O.—Assistant Medical [illegible] per annum, with apartments, [illegible]

[illegible] Church-street, Queen's-road.—[illegible] six months, renewable. Salary [illegible]

[illegible] AL.—Assistant House Surgeon. [illegible] board, washing, and attendance.

[illegible] DISPENSARY FOR [illegible] strar. Honorarium of £100.

FARRINGDON GENERAL DISPENSARY, 11, Bartlett's-buildings, Holborn [illegible]—Resident Medical Officer. Salary £120 per annum, [illegible] ments, coals, gas, and attendance.

[illegible] SPITAL.—House Surgeon. Salary £100 per annum, with [illegible] esidence.

[illegible] UNTY AND CITY ASYLUM.—Senior Assistant Medical [illegible] narried. Salary £150 per annum, with board lodging, [illegible]

[illegible] SICK CHILDREN, Great Ormond-street, London, W.C.—[illegible] ntist. [illegible] 0 per [illegible] las — [illegible] with board and washing.

LONDON TEMPERANCE HOSPITAL, Hampstead-road, N.W.—Resident Medical Officer. Salary £200 per annum, with board, lodging, and washing.

LONDON THROAT HOSPITAL, 204, Great Portland-street, W.—Non-Resident House Surgeon for six months. Honorarium at rate of £50 per annum.

NEW ZEALAND, SEACLIFF LUNATIC ASYLUM, Dunedin.—Assistant Medical Officer, unmarried. Salary £250, with board, lodging, and washing.

NORTH-EASTERN HOSPITAL FOR CHILDREN, Hackney-road, Bethnal Green, E.—House Surgeon for six months. Salary at rate of £60 per annum, with board, residence, and laundry. Also Assistant Surgeon.

NORTH STAFFORDSHIRE INFIRMARY AND EYE HOSPITAL, Hartshill, Stoke-upon-Trent.—Assistant House Surgeon for six months. Honorarium £25, with board, lodging and washing.

NOTTINGHAMSHIRE CONSUMPTION SANATORIUM, Mansfield.—Resident Medical Officer. Salary £100 per annum, with board, lodging, and washing.

NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon, unmarried. Salary £160 per annum, with apartments, attendance, &c.

QUEEN'S JUBILEE HOSPITAL, Richmond-road, Earl's Court, S.W.—[illegible] two [illegible] THE [illegible] rried. [illegible] Also [illegible] ficers, unmarried. Salary £100 per annum, with board and lodging.

ROYAL ORTHOPÆDIC HOSPITAL, 55, Bolsover-street, W.—Resident [illegible] Salary £200 per annum, [illegible]

[illegible] W.—Demonstrator [illegible] months. Salary at [illegible] Surgeon for six [illegible] th board, washing, [illegible]

SURREY DISPENSARY, Southwark, S.E.—Surgeon. Honorarium 60 guineas per annum.

THROAT HOSPITAL, Golden square, W.—Honorary Anæsthetist.

WAKEFIELD, WEST RIDING ASYLUM.—Pathologist and Assistant Medical Officer. Salary £140, rising to £160, with apartments, board, [illegible]

[illegible] Clapham [illegible] Salary [illegible] g. [illegible] House [illegible] washing, [illegible] Officer of [illegible] hysician, [illegible] board, [illegible]

Births, Marriages, and Deaths.

BIRTHS.

[illegible] the wife [illegible] Walden, [illegible] Bascombe, [illegible] A. Martin, [illegible] wife of [illegible] Roundhay, [illegible] the wife of [illegible]

MARRIAGE.

SOWRY—CADDICK.—On [illegible] Staffs, by the Rev. S[illegible] and the Rev. Hevw[illegible] B.S. Lond., F.R.C.S. [illegible] Stella, eldest daugh[illegible] castle, Staffs.

DEATH.

MURPHY.—On June 28th, at 6, Thornhill-crescent, Sunderland, the residence of her son, Sarah Murphy, widow of William Chapman Murphy, M.D., aged 90.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

MR. BLANK OF PICCADILLY CIRCUS.

On Feb. 20th of the present year we drew attention in The Lancet to an advertisement in the *Barbados Advocate* of one "G. Thomson Blank (late of Piccadilly-circus, London)" who was described as "Dental Surgeon to His Excellenc [illegible] Governor of Barbados, Lady Hodgs [illegible] advertisement now appears in the [illegible] know whether the Governor of Barbados has given his authority for this use of his name—especially in view of the fact that the advertiser says he is in Barbados principally on a health visit—and, if not, why some steps have not been taken to prevent G. Thomson Blank from making an improper use of the name of one of the King's representatives.

THORNE DEFENCE FUND.

To the Editors of The Lancet.

Sirs,—We beg to enclose a further list of subscriptions in aid of the above fund. The full amount required having been received the above fund is now closed.

We are, Sirs, yours faithfully,

Walter S. A. Griffith, M.D. Cantab.
Walter Tate, M.D. Lond.
June 29th, 1904. Douglas Drew, F.R.C.S. Eng.

	£	s.	d.		£	s.	d.
Amount previously subscribed	162	16	0	Mr. James Cantlie	1	1	0
				Dr. Agatha Porter	0	7	6
[illegible]	10	10	0	Dr. Ada Browne	1	1	0
[illegible]	2	2	0	Mr. C. J. Symonds... ...	2	2	0
[illegible]	1	1	0	Dr. G. Danford Thomas	1	1	0
[illegible]	1	1	0	Dr. T. Wakefield	1	1	0
Dr. John D. Rice	1	1	0	Dr. A. de Steiger	1	1	0
Dr. Louisa Atkins	2	2	0	Mr. Samuel Welch... ...	1	1	0
Dr. Mary Murdoch ...	1	1	0	Mr. T. Jenner Verrall ...	1	1	0
"Vox clamans"	3	3	0	Dr. Annette Benson ...	1	1	0
Rev. and Mrs. Septimus Buss	5	0	0	Dr. Helen Hanson	0	10	6
				Mr. A. G. R. Foulerton	1	1	0
Dr. Katharine McGuvie	1	1	0	Dr. Marie Sharp	1	1	0
Dr. Auguste Boyes ...	1	1	0	Dr. Elizabeth Courtauld	1	1	0
Dr. Heywood Smith ...	1	1	0	Mr. W. D. Spanton ...	0	10	6

"MARTIN'S UP-TO-DATE BEGINNER'S TABLE-BOOK. FOR SCHOOLS AND HOME TEACHING."

In *the review of this book published in* The Lancet *of April 30th, 1904,* we stated that "we hardly think that the pupil should be told that 'all weights and measures not appearing in the following tables are purposely omitted to prevent a pupil's mind from being crammed with a lot of nonsense.'" Mr. A. J. Martin, the compiler of the table-book, calls our attention to the fact that the words appearing in his table-book are: "All weights and measures not appearing in the following tables are not authorised by Parliament and are therefore 'purposely omitted' to prevent a pupil's mind from being crammed with a lot of nonsense." Mr. Martin thinks that the omission of the words "not authorised by Parliament and are therefore" is very misleading to our readers. Although the words were omitted by a *lapsus calami*, which we regret, it does not follow that things which are not authorised by Parliament must be nonsense.

CHILD-STUDY.

To the Editors of The Lancet.

Sirs,—Will any of your correspondents be so kind as to tell me where I can obtain some details of the physical and mental development of children from birth up to the age of 14 years? I want to know, for instance, the normal height, weight, and head measurements at various stages and, in fact, any details which will be the means of making child-study really useful. The ordinary text-books on physiology and psychology do not give this information and it is exceedingly difficult for students to carry out observations upon the children they are studying without some accurate guide. I may add that the observations made in this way should help teachers to determine, among other things, whether a child is fit for physical exercise and whether his bodily state is such as to call for medical aid. Thanking you in advance, I am, Sirs, yours faithfully,

June 26th, 1904. "Child-Study."

THE SELF-FILLING PEN.

A form of pen, "fountain," "stylographic," &c., which can be carried about ready for use is almost as indispensable now to a medical man as it is to a journalist; and it is not surprising, considering the demand for the pens, that various manufacturers have been able to make greatly improved patterns. We have recently had brought to our notice a "self-filling" pen in which, by a simple arrangement of a lock ring, a bulb, and a presser bar, the pen can be filled without any of the usual trouble of unscrewing and without the intervention of any sort of filler. The pen is simply held point downwards in clear ink, a small bar is pressed, and into the vacuum so created the ink rises. The saving of time and trouble is very great and as the pen is easily cleaned as well as easily filled, and is thoroughly well made, it would seem to be sure of a successful future. It is manufactured at low prices by the Conklin Pen Company and sold by the American Agencies, Limited, 38, Shoe-lane, London, E.C.

THE NATIONAL FIRE BRIGADE UNION.

The National Fire Brigade Union, representing 600 towns and possessing a membership of over 12,000 firemen, has decided to hold its annual camp and competitions at the Crystal Palace from Monday, July 18th, to the following Saturday. The men will be housed in tents pitched in the most beautiful part of the grounds, extending from the Cedars Grove to the Centre Walk, and although, of course, the exigencies of their calling will prevent all the men being off duty for four days together, there never will be less than 3000 men under canvas. Only the smartest brigades, those which have successfully passed through the preliminary trials, will take part in the displays and competitions which are to be held on the broad Firework Terraces. The grand review is fixed for Thursday, July 21st, when the medals and shields will be distributed by the Duchess of Marlborough.

THE INHABITED HOUSE DUTY REPEAL ASSOCIATION.

A correspondent *informs us that he has parted with 2s. 6d.* as a subscription to this society in response to an application made to him by a man giving the name of W. B. Benham and the address of Albert-buildings, Queen Victoria-street, London. He wishes to know what the position of this association is. We have not ourselves any information on the subject. Possibly some of our readers may enlighten us. We observe that at the address given an association of the name exists.

◆

Hector.—The advice to be given to the unfortunate residents in a *cottage where a corpse has to remain among them is not easy to* suggest. The room should, of course, be freely ventilated, screened from sunlight and flies as in the case of mortuaries and shut off from the cottage, but where this is impossible it is not of much use to give the advice. The body ought to be removed to a mortuary, but if there is not a mortuary the distressing circumstances mentioned by our correspondent may ensue.

D.P.H.—We are not in a position to give our correspondent information. The examination has not yet taken place, the regulations being published for the first time in this week's issue of The Lancet. There will be no harm in our correspondent applying to the university lecturer in medical jurisprudence, who happens to be the gentleman most likely to be able to give the information.

An Observant Pharmacist writes a very sensible letter but in spite of his pseudonym he has failed to observe a very prominent factor in the present position. There are districts where medical men must dispense their medicines because there is no one else to do it, the locality not affording a livelihood for a dispensing chemist or druggist.

Hope does not understand the situation and attributes to something which she calls medical etiquette proceedings that are adopted for the safety of the public. The second case appears to show that a condition which was at first unrecognisable became obvious after rest in bed, when operation gave relief.

Ignarus will feel much obliged if anyone can suggest a permanent residence in the Midlands, town preferred, but not essential, suitable *for a family suffering from rheumatism and gout. Any suggestions* will be highly valued. A place not too cold and sheltered from keen winds is advisable.

An Old Hospital Resident.—We regret to be unable to publish the really humorous story but we think that if it were seen by the public it would convey a very wrong impression with regard to the obstetric assistants nowadays sent out from the general hospitals.

Mr. S. Thistlethwaite sends us a complaint with regard to an advertisement which did not appear in our columns. The questions that he asks us should clearly be directed to the editor of the work in which the advertisement appeared.

Student.—Observations have been made upon the lines indicated, we believe.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

The Lancet Office, June 30th, 1904.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind	Rain fall.	Solar Radia in Vacuo	Maximum Temp Shade	Min. Temp	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
June 24	29 94	S.	...	123	74	56	56	64	Fine
" 25	29·51	WNW	0·13	112	66	54	54	59	Cloudy
" 26	29 87	W.	0 07	116	68	51	53	60	Cloudy
" 27	30·04	N.W.	...	118	70	52	53	58	Cloudy
" 28	30 20	N.E.	...	114	71	53	56	61	Fine
" 29	30·12	SSW	...	118	77	56	58	64	Fine
" 30	29·94	S.E.	...	119	77	55	58	64	Fine

Medical Diary for the ensuing Week.

OPERATIONS.

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University College
M.), Charing Cross
t.), King's College

WEDNESDAY

ON (20, Hanover-
Dr. Lewers, Dr.
H. Williamson,
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FRI

UNITED KING-
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.30 P.M.

on Hos-
Practical
Medicine.

UNIVERSITY COLLEGE (University of London) (Physiological Theatre).—5 P.M. Dr W. P. May: Advanced Lectures on the Tracts of the Brain—Lecture X.: Smell and Hearing.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (Brompton).—3 P.M. Dr. Wethered Varieties of Pulmonary Tuberculosis.

SEASES OF THE
The Diagnosis
cases). (Post-Graduate Course.)

THE HOSPITAL FOR SICK CHILDREN (Gt. Ormond street, W.C.) —

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to

SATURDAY (9th).—ST. PETER'S HOSPITAL (Henrietta-street, Covent Garden).—2.30 P.M. Mr. W. J. Thomson-Walker: Diagnosis in Urinary Disease.

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MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index to Vol. I. of 1904, which was completed with the issue of June 25th, and the Title-page to the Volume, are given in this number of THE LANCET.

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A Clinical Lecture

ON

CASES OF APPENDICITIS

Delivered at St Bartholomew's Hospital on Feb 17th 1904,

BY ANTHONY A BOWLBY, C M G,
F R C S ENG

SURGEON TO AND LECTURER ON SURGERY AT THE HOSPITAL

GENTLEMEN —My own experience of clinical lectures is that the more truly they are clinical and the more intimately they deal with cases in the wards or with cases which have recently been in and the less like books they are the better In looking over the cases which have been in my own surgical wards during the last few months I have been struck by the number of cases of abdominal surgery there have been and amongst these there has been quite a large proportion of cases of appendicitis But in addition there have been cases of gastro intestinal trouble and also surgical cases in connexion with the ovaries and uterus I shall have an opportunity of saying something about these another time What I want to speak to you about to day is some of the lessons which may be learnt from the cases of appendicitis which we have had in the wards in the last three or four months I find we have had 17 cases of appendicitis which have come to operation and 13 of those 17 cases have been non suppurative, the remaining four having been suppurative When we come to classify these and to see how it was that these patients came to have operations done upon them we find very varying histories Let us take one characteristic sort of history that of a girl in Stanley ward who was one of the most recent to be operated upon She is 16 years of age and gives this story She has had four attacks of abdominal pain The first attack occurred in June 1902—that is to say nearly two years ago—and came on suddenly in the night It was localised on the right side low down was accompanied by sickness and for several days afterwards by constipation and, her medical attendant adds by fever So you see it was a fairly typical case of appendicitis The pain at night is a very curious fact in these cases of appendicitis In a large number of patients the pain comes on at night and I have no explanation of that to offer you But you have to consider what it is that could cause a sudden attack of pain in the night when the person is not doing anything actively by which he can hurt himself and at a time when the last meal that has been taken has already been in the stomach or intestines for many hours At any rate this otherwise apparently causeless attack of pain coming on at night is very suggestive of appendicitis Well, this girl felt herself unable to go about her work in the morning but did not take to her bed until the evening She remained in bed two days and then got up and felt quite well It was a very transient attack She has had four such attacks up to the present time all of them more or less of the same character as those which I have been describing It is alleged that her last attack a month ago was more severe and that she remained in bed for eight days She goes on to say that if she takes any active exertion it brings on an attack She tells us also that she is unable to eat anything hard and difficult to digest without bringing on an attack and that a long walk or bicycling has a similar effect Now that is a pretty typical instance of one class of case and the following questions are suggested What is it that happens to cause the sudden pain? How is it that it also goes away so suddenly? And also how is it that the pain leaves the patient so little the worse for it?

There is another class of case altogether illustrated by children as well as adults who have been in the wards and their histories have been of attacks of abdominal pains which have not been localised anywhere in particular and were of doubtful nature Let me tell you of a boy whom I have recently operated upon elsewhere as he is a characteristic case of the kind I am now alluding to for in his case the attacks of pain were not as in the girl localised to the right iliac fossa He was alleged to have been liable to attacks of so-called 'acute indigestion for the last two years The story was that often at night and sometimes in the early morning soon after getting up he would have attacks of sickness and pain and it was not thought much of because it was believed that he must have eaten something which disagreed with him As I have said, he had no localised pain but he had attacks of sickness which, however, did not alarm his parents at all for they concluded that they were 'stomach attacks and the boy got over them in the course of about a day on the next day being as well as ever Then a few weeks ago he had measles At the time he had measles he had one of these attacks and the parents said to the medical man who was looking after him that they were quite used to them The medical man inquired further and found that they were frequent and very transient but he could not find anything in the boy's abdomen to account for them The boy got over the measles and at the end of his illness when he was up and about again, he had another attack which began like the others but was more violent and then he complained of pain in the right iliac fossa He had never previously in other attacks complained of pain there but said that the pain was all over the abdomen—a colicky sort of pain This time he was found by his medical attendant to have a definite pain in the right iliac fossa and also some tenderness there, so that he could not bear it to let [illegible] hed And of course, the medical man said at once This is an attack of appendicitis The temperature was found to be 102 6° F and the patient was altogether very ill when I was asked to see him I did not see him that night but I did next morning He had had a good night had completely lost his pain had no tenderness and appeared to be perfectly well So there again the attack was exceedingly transient even more so than the attacks in the case of the girl But in this boy there was a history of a great many attacks of pain in the abdomen, though none of them had given rise to the slightest suspicion of anything being the matter with the appendix Now I want you to remember first of all that a very large number of attacks of slight appendicitis in young people children particularly may be associated with no pain in the iliac fossa at all and there may be even no tenderness, but in most cases that is not even examined for because as in the case of this boy the parents do not call in a medical man These are the sort of attacks in which the patient is almost certain to have frequent relapses The case of the boy I have referred to illustrates pretty well that of another boy who is now in Darker ward There is a history in this case of many attacks in which there was no evidence that the appendix was affected and yet at the end of them all there came an attack which was definite appendicitis But you can see now that although he has probably had only this one typical attack of appendicitis proper he has had many attacks of abdominal pain and sickness which were really due to the same cause

The next point I want you to consider with me is what was the matter with these appendices when I took them out? In the case of the girl who had had four attacks what was there to show? When I opened the abdomen there were no adhesions and when I got the appendix outside the cavity of the abdomen it presented practically nothing abnormal except that it was a little swollen and that it was sharply bent and kinked so that it was bent almost to a right angle by a very short mesentery Then as to the appendix of the boy whom I have been referring to who had but one definite attack of acute pain and distension and high temperature, though he had had many other attacks which had not been diagnosed as appendicitis what was the condition of his appendix? It was very long it contained some fæcal matter and at its tip it was distended But there were no adhesions no inflammation and in the neighbouring peritoneum there was nothing to make you say that the peritoneal surface had ever been inflamed at all I have no doubt that the proper explanation of these attacks which were so transient that they passed away in the course of a few hours leaving the patient apparently perfectly well and no worse for the bout was that the main lesion was not an inflammatory one I am sure that in these patients there

f the whole thickness

ical coat for if that

lhesions in the neighbourhood after so many attacks Yet in these cases we are referring to there were no adhesions Well what is the explanation of the attacks of pain? What is it that causes the sickness and the griping and how is it that these so suddenly pass away? I am sure myself the explanation is that there is a distension of the appendix by secretion and that when this gets out after having been blocked up the whole of the symptoms rapidly subside. There have never been anything more than a distension and retention of such mucous fluid as may be formed in the appendix itself. The next thing is, what is it that blocks up the appendix, and why cannot the secretion get out? The answer to that, first of all, is to be found in the condition of both of these appendices which each contained fæcal matter; and if that fæcal matter is allowed to remain there a sufficient time it becomes hard and forms a concretion, although for long before that it has obstructed the passage through the tube. The appendix ought to contain no feculent material at all. Next, I told you that the mesentery was very short in the case of the girl and that the appendix was consequently bent. That bending or doubling up of the appendix you may easily conceive makes it difficult for the contents to pass along and so may cause distension. Then in many other cases when you remove the appendix you will find, on laying it open, that at some point it is very much narrowed. If you were speaking of the urethra you would probably apply to it the term "stricture" and I think you may use the same term quite correctly in connexion with the appendix. Any one of these conditions, then—namely, fæcal contents, kinking, or stricture, or more than one of them, will be found to be quite sufficient to account for the stopping of the lumen of the appendix and the retention of secretion inside it. It is in those circumstances I believe that these sudden, acute, transient attacks occur. Next, why do they occur? What brings them on? Why should a patient have an accumulation of anything at all inside the lumen of the appendix? Let us remember this: that the lumen of the appendix is after all very much like the lumen of the rest of the intestinal tract, and that, just like the rest of the intestinal tract, it may be affected by external conditions, such as cold and wet, and also by internal conditions such as bad food, or food which irritates the inside of the bowel. So that any of these conditions which we know may easily cause catarrh in the intestine may, and probably do, cause catarrh in the appendix. Whatever is the pathology of catarrh in the intestine is also the pathology of catarrh in the appendix and I think it is a very easy thing to explain how, in a part where catarrh has occurred before, thick mucus may be rapidly formed as a result of either errors in diet or exposure to cold and wet.

Now let us consider another class of case altogether. There was a soldier sent in with the story that he had had a very acute attack of appendicitis and that the army authorities were unwilling that he should return to serve until he had had his appendix removed. We found that he was a fine, healthy-looking young man, and the history which I got from the surgeon was that he had had a very violent attack of acute appendicitis with some peritonitis, that he had been taken ill with a great deal of general abdominal pain, sickness, and much flatulent distension of the bowels, a high temperature and rapid pulse. The question was raised whether he ought to be operated upon there and then by the surgeon, but they managed to tide him over the attack, though it was very severe and prolonged, and it was a week or two before his temperature came down to normal. Altogether he was in bed for several weeks and then he gradually picked up and got well enough to come to the hospital to have the appendix removed. I operated upon him and when I opened the abdomen I found that everything was adherent in the right iliac fossa. After a good deal of trouble we freed the omentum and separated the adherent intestine and after further trouble came down to the under part of the cæcum where the appendix is attached. There we found a mass of old granulation tissue and we found also the stump of the appendix and that was all. The appendix had been destroyed and undoubtedly the rough bare place which we exposed on the under surface of the cæcum was the place where there had been an abscess which had probably opened into the bowel. As it turned out, the operation upon that man, surgically speaking, was unnecessary. Of course it was necessary from one point of view because unless something could be ascertained definitely as to the condition of the appendix and the man's liability to have another attack of appendicitis it was evident that he was not fit to be a soldier. In precisely similar circumstances I operated a year ago upon a young officer. His story, which again was sent to me by his army medical officer, was a clear one. It was as follows. When near the north-west frontier of India he was taken with a very violent attack of pain and sickness which was believed to be due to peritonitis. He was desperately ill and he lay in bed for six weeks. His recovery was very tardy. He was then told: "If you are to stay in the army you must get rid of your appendix." And he came over here for the purpose of having it removed. I operated upon him and found almost an exactly similar condition of things to that I have just described. The man had quite evidently had acute inflammation with the formation of an abscess and complete destruction of his appendix. And though we found the stump of the appendix—and I should not have been satisfied if I had not—we became convinced that nearly the whole of the appendix had been destroyed. We felt certain that he had had inflammation which had gone on to suppuration, that this suppuration had destroyed the appendix, and that pus had made its way out by an opening into the cæcum. There again there was really no necessity to have operated. You must remember then that the acuteness of the attack is not by any means an indication of the necessity for the subsequent removal of the appendix if the patient is an adult but rather the contrary. Indeed, if you find that an adult has had a very violent and prolonged attack of such severity as to threaten his life, the probability is that there may be no necessity to operate for the removal of his appendix, because it is very likely that it will have been destroyed. In some such cases as these you will find a definite history that pus has been passed by the bowel, and if you can definitely ascertain that pus has been passed by the bowel I think you may say that there will most likely be no necessity for operation. But you cannot always get that history, because the pus may be disintegrated in the bowel or may find its way only slowly into the intestine so that no great quantity at any time may find its way into the motions, and then you have to rely largely upon the history of the severity of the attack. For many years I have been inclined to advise people not to have the appendix removed because of one very severe attack, and the more severe, the more prolonged, and the more dangerous that attack has been the more it has seemed to me that there is no necessity for operation, for the severity of the attack has probably resulted from an inflammation which has exterminated the very organ which was the seat of the mischief. A fortnight ago I operated upon a patient in whom there was a history of two attacks, and it was because there had been two attacks that I advised operation. The first attack was not a bad one, but the second was. Still it did not seem to be so bad as to make it probable that the appendix had been destroyed, so I operated. When I opened the abdomen I found everything matted to the side of the abdominal wall. With a good deal of difficulty and trouble I separated the adherent cæcum which was unusually high up, and having got it out into the wound and looked for the appendix we found the place from which the appendix sprang from the cæcum and after tracing it through some inflammatory exudation and adhesions we found it came to an abrupt termination and was adherent to the cæcum [illegible] During that examination which wa[illegible] satisfy myself that the appendix wa[illegible]nd that I had separated adhesions [illegible] a hole into the cæcum. I had not made the hole, but I had uncovered a hole which had previously been covered by the adhesions which had closed it. That was another case in which suppuration had evidently destroyed the appendix and in which except for freeing adherent omentum my operation had done no particular good; indeed, if one had made much of an opening in the cæcum it might have done harm; but I managed to close the hole and to shut up the wound. Probably the appendix in this case had been destroyed by the second attack. I could multiply these cases and of those which I have seen where there has been a definite discharge of matter by the bowel I have never had one of them afterwards in which it has been necessary to remove the appendix, nor yet where I have heard that the patient has had another attack. Therefore I want you to appreciate that there is a great deal of difference between these cases of a single, acute, prolonged atta[illegible]haracter, especially in adults, and those [illegible] attacks in children and young people [illegible]ransient character which are liable to go on recurring and to get worse. It is for such attacks as these that I always advise the friends and the patient to have an operation [illegible] the appendix by fluid, which [illegible] into [illegible] and t. [illegible] patier [illegible]

Then there are some oth [illegible] which I will allude briefly, cases [illegible] of the patients are in the hospi [illegible] nth in Darker Ward who came [illegible] home to-day, but when he wa [illegible] e was very dangerously ill. His age was 18 years and the history was that five days previously on a Friday evening at nine o'clock he felt pain in his right groin and was sick all night. In spite of that he got up to [illegible] when he [illegible] e on to [illegible]

[illegible] erature [illegible] from 96 [illegible] That is, of course, the wrong way round; instead of his pulse coming down with his temperature it rose. I did not operate upon him that day; I thought that as he had only just been put to bed we would wait and see what was [illegible]

[illegible] it had risen to 120 and he [illegible] pain. His temperature w [illegible] opened his abdomen on the right side and found that he had a very extensive abscess which went down to his pelvis with very ill-defined boundaries. I expect that if I had opened his peritoneal cavity in the middle line or on the other side I should have found that there was *some inflammation of it*, though probably no pus inside the general peritoneal cavity. The reason we operated upon him was partly because of his increasingly rapid pulse and partly because he continued to be sick in spite of our stopping [illegible] uth. His [illegible] us. When [illegible] of stink- [illegible] tissue all round, and for a long time afterwards the patient was desperately ill though he ultimately made a good recovery.

Now let me tell you of another case which I have seen very recently which illustrates this point about the temperature very well. A girl, aged ten years, was taken ill suddenly, with a rigor and pain in the abdomen. The history was that [illegible] months previously when in the [illegible] similar attack *accompanied* by [illegible] for three days and difficulty in [illegible] he abdomen, and difficulty in [illegible] this there was a temperature of [illegible] t over the worst of that attack [illegible] some abdominal discomfort persisted for several weeks. The next attack began on a Thursday and on the Friday I saw the patient. The abdomen was distended and the child was very sick, the pulse was 140, and the temperature when she was put to bed was 102°, though that morning it had come down to just under 100°. *The same evening, no food having* been given by the mouth, she had been less sick. I did not see her on the Saturday as she was better and the sickness had stopped, but on the Sunday her temperature was normal and her respirations were normal too. The pulse was 130. Sickness had not returned, the abdomen was not distended, the bowels acted with enemata, but there was a great deal of pain in passing urine. The absence of sickness was a good [illegible] nen was also [illegible] moved very [illegible] was Sunday [illegible] he pulse did [illegible] next morning with a normal temperature, [illegible] he night the child had been very sick again [illegible] in and the [illegible] l, t [illegible] in [illegible] s [illegible] been discont [illegible] better to op [illegible] temperature, [illegible] more *important to lay stress on the return of sickness and* the hard and fixed abdominal wall. I therefore operated and found pretty much what I expected to find—namely, a considerable collection of pus in the pelvis, the evacuation of which gave speedy relief

Let us take another case. There is a boy at the present time whom some of you have seen in No. 2 Darker Ward; he came in with general abdominal distension but very litt [illegible] 0. When I saw [illegible] of the abdomen [illegible] or pain; there [illegible] operating upon [illegible] day he continued [illegible] ole satisfactory and Mr. R. C. Bailey, who [illegible] led that there was still no indication for an [illegible] ally as the bowels had been freely opened [illegible] *more easy. But instead of the symptoms* further subsiding the patient was taken rather suddenly very much worse the next day and Mr. Bailey found him in an almost pulseless condition and desperately ill, so ill that the anæsthetist hardly thought he would get him off the table alive. [illegible] had [illegible] had a large collection of pus and general peritonitis. [illegible] tunately up to the present time he seems to have gone on sufficiently well to lead us to hope that he will recover altogether; but he has had many complications and one of them is very common in cases of diffuse appendicitis—namely, suppuration in the upper part of the *abdomen as well as in the lower part—a subdiaphragmatic* abscess. And he has had another complication which is common—namely, a secondary abscess in his pelvis, that is to say, he has had diffuse peritonitis with localised collections of pus in the upper and lower parts of his abdomen and pelvis. A curious thing about his case is that in each fresh abscess the symptoms have been cumulative. He went on well for a week after the abdomen was freely opened and at the end of that time he was again taken very much worse and Mr. Bailey accordingly operated and let out pus from beneath the diaphragm. Then again he went on satisfactorily for a week and whenever I saw him he appeared to be doing well and expressed himself as cheerful and happy and free from pain. But I received a message one evening to say that he had been suddenly taken much worse. I found he had a good deal of tenderness over his pubes and difficulty with his urine, and I opened up his abdomen by an incision in the middle line and let out a large collection of pus in his pelvis, about one and a half pints, which probably had been there for several days, yet had given no symptoms of its presence. It seemed that until the accumulation went beyond a certain point there was no evidence forthcoming of what was going on inside.

Now, another word about one condition noticed in two of the patients whose cases I have mentioned—namely, painful micturition. You [illegible] that there is pai [illegible] *deal of difficulty* [illegible] of that is almost always to be found in the fact that in these cases the inflammation has spread into the pelvis. In many cases where the pain is yet worse there is a definite collection of pus in that region, a pelvic abscess. In the little girl of whom I spoke the pain was most characteristic and it was the pain on passing urine which made one say that very likely there was a collection of pus in the pelvis, for when there is pelvic peritonitis micturition is often very painful indeed, though there is little to be felt externally. When you remember that pus forming in the pelvis may not be perceived by examination of the anterior abdominal wall you will see how important it is to pay attention to the complaint of painful micturition and to the examination of the patient per rectum. In the majority of cases of appendicitis such an examination is of as much importance as examination of the anterior abdominal wall. For you must remember that a large part of the peritoneal area is not accessible through the anterior abdominal wall by palpation and you can often find per rectum a definite swelling which would not be evident from the front. You will thus be led to diagnose pelvic peritonitis which otherwise might have escaped you, for the rest of the peritoneum of the patient may be completely free from mischief.

The Milroy Lectures

ON

DEATHS IN CHILDBED: A PREVENTABLE MORTALITY.

Delivered before the Royal College of Physicians of London on Feb. 25th and March 1st and 3rd, 1904,

BY W. WILLIAMS, M.A., M.D., D.P.H. OXON.,
MEDICAL OFFICER OF HEALTH TO THE GLAMORGAN COUNTY COUNCIL.

LECTURE III.[1]

Delivered on March 3rd.

PREVENTIVE MEASURES.

MR. PRESIDENT AND GENTLEMEN,—Notwithstanding the precautionary measures adopted in general midwifery practice, the alarming fact that 4000 mothers are annually lost in England and Wales still stares us in the face. What, then, is our duty in respect of this high puerperal mortality? Are we to trust to the repetition of *Abracadabra* as extolled by Sammonicus, or are we to go to bed and dream about it as directed by Galen? This we have tried long enough and naturally without any beneficial result. This same question was asked many years ago and it occurred to some benevolent persons that the solution of the problem was in the establishment of lying-in hospitals, where women—poor, destitute of comfort and means, as many are at their own homes—should be received and delivered. These institutions after many years of anxious trial have answered admirably and it is to means similar to those which have been found efficacious in diminishing the mortality in them that recourse must be had to procure a similar reduction in general practice. To use the significant and beautiful sentence penned by the late Mr. T. W. Thompson of the Local Government Board, "Such improvement can only be brought about by a *full* appreciation of *all* that is known of the etiology of the disease and an adequate sense of the responsibility on the part of *all those* brought into relation with the lying-in chamber." Dr. Cullingworth has strongly advocated the more general use of antiseptics in private practice and has particularly urged that every practitioner should recognise his individual responsibility in this matter. To bring about this diminution of mortality is a work in which various sections of the community must take part, such as the parturient women themselves, the midwife and medical attendant *in particular*, the medical officer of health, the sanitary inspector and public bodies such as local sanitary authorities and county councils, and the legislature.

Young women about to become mothers require instruction and special care, for by leading a natural life in conformity with the laws of health they often save both themselves and offspring, for few women in advanced pregnancy can stand the hard work to which, alas, they are too often exposed. Although childbirth is a physiological process and in favourable circumstances (where the mother has been previously taken care of) is attended with little danger, yet every childbearing woman looks for some help in her travail; but many, even in these enlightened days, are left to nature or to ignorant midwives.

Women in all ages and countries have done much noble work as midwives and as nurses—the mother of Socrates was a midwife, "brave and burly." A large proportion of mothers have been from time immemorial attended by midwives, and educated midwives as well as medical men are required to secure the best chance of life to the mother and to the child. This is a natural and excellent arrangement, as midwifery is a business for which intelligent women are admirably fitted. Until lately, and even now in some places, it was assumed that midwives were born and not made and their training was entirely left to chance. At the present time it rests on very unsatisfactory foundation, although systematic instruction has been imparted to them in some quarters. A very common cause of death in childbed is simply "the want of skilled assistance" and a mother's life often hangs on a simple act which can be easily performed by any intelligent woman who knows her work. In the absence of this the mother dies. There is scarcely a person whose life, or whose mother's life, might not at one time have depended upon the skill of a midwife. Newton had a narrow escape; and Goethe begins his autobiography by saying that through the unskilfulness of a midwife he was born for dead and that only after manifold efforts on the part of those around him he saw the light of day. It is true that a medical man can be called in, but in scattered and mountainous districts he is not always at hand when danger is imminent. To discover danger a knowledge of its sources is required and those of us who have come in contact with midwives of the Sarah Gamp type are well aware that ignorance does not diminish their self-confidence. No one who has reflected upon this subject, and certainly no one who has had practical acquaintance with it, will contend that the annual loss in England and Wales of over 4000 mothers in childbed is not deplorable. Certainly nothing should prevent those that have the public health at heart from giving this subject their most attentive consideration. This matter has not received the attention it deserved either at the hands of the legislature or at those of public authorities. The provisions of the Midwives Act, 1902, will, in my opinion, meet the case to a great extent, but I would suggest that the training of midwives is a typical form of technical education and is a work that ought to be undertaken by county councils. Certainly, in some way or other, assistance should be forthcoming to help intelligent women to fit them to render "first aid" to their sisters in travail. The utility of a recognised body of educated midwives acquainted with the plain doctrines of health and capable of rendering assistance during labour would be incalculable to the community at large. I do not mean that midwives should displace medical men in any way, where such can be obtained, but they should be in a position to render valuable aid before the arrival of the practitioner and to carry out his instructions faithfully as to the administration of remedies, the use of the syringe and catheter, general cleanliness, the warming and ventilation of the room, the diet, and a thousand and one other acts on which the health and life of the mother depend. The medical officer of health and the sanitary inspector can also render great help towards diminishing this mortality. The infected premises should be visited as soon as possible and as soon as the case is over all sanitary defects should be remedied, the house should be fumigated, and the clothing of the midwife, the soiled linen, and the like of the patient should be passed through a disinfector or, failing this, be destroyed. The midwife should undergo thorough antiseptic ablution, especially of such parts as the finger nails, that are the most likely to retain infection. This is impossible in districts where disinfectors have not been provided, and they are many. It therefore becomes incumbent upon local authorities to procure such, and none should be considered fully equipped unless it has a bath-room and dressing-room in connexion with it. Before the medical officer of health can be expected to accomplish these duties the tenure of his office must be secure and his salary must be adequate.

There are other avenues—now more or less shaded or obscured by the midwives question—along which some of our efforts might well be directed. Every girl among the poor and artisan classes should be taught the elementary principles of nursing and hygiene. The establishment of lying-in institutions should be encouraged in these localities and the parturient poor induced to become patients over their confinements. It is true that the guardians of the poor provide a lying-in ward in their workhouse infirmaries; and there are scores of women in poor circumstances who would gladly enter a maternity but refuse the lying-in ward of the workhouse because of the *stigma pauperis* connected with it and accept the alternative of remaining at home, to be there—may be, in the heart of unhealthy influences—attended by unskilled women and often to face the risk of being fatally infected. The dissemination of elementary knowledge of the nature indicated might well be encouraged by our county councils and local authorities and this matter is engaging the attention of the Glamorgan county council with a view to secure the better training of midwives. I have endeavoured to show that a very large number of poor women who are unable to obtain the services of medical men are attended in childbirth by midwives alone; how often it is that fatal results, and even epidemics, follow ignorance on their part of the means to prevent infection, and their inability to diagnose danger in time, and I feel convinced that this mortality in childbed among the poorer classes can be very materially diminished in the several ways I have indicated, especially if they are attended by sober and intelligent women, acquainted with the plain doctrines of health, and possessing an elementary knowledge of midwifery.

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[1] Lecture I. was published in THE LANCET of June 18th (p. 1701) and 25th (p. 1772) and Lecture II. in THE LANCET of July 2nd (p. 4), 1904.

Before dealing with the Midwives Act it would be well to give a very brief epitome of the various steps taken that [illegible] I am indebted to contributions and notes [illegible] phreys, honorary secretary to the [illegible], the particulars contained in the following historical sketch. He who would wish to write anything like a complete history of these steps would have to ransack the history of England and to search the records of Church and State for centuries in order to obtain the ups and downs of the Guild of Midwives. I do not propose, however, to refer to the past except so far as it is necessary to explain the condition of affairs that has caused the postponement in England of legislation which was secured by nearly every other European nation many years ago. Before the time of Henry VIII. the medical profession was controlled by the Church and the bishops licensed physicians, surgeons, apothecaries, and midwives alike, but when the faculty began to manage these matters midwives were ignored. At this time there was no clear difference between the branches of medicine, surgery, and midwifery, and it was after the formation of the Royal College of Physicians of London in 1518 that the change was brought about. In 1541 an Act uniting barbers and surgeons was passed. In 1618 Dr. Peter Chamberlen entreated James I. "that some order may be settled by the State for the instruction and civil government of midwives," and it was his son, who was physician to three kings and queens of England, that moved the Court to organise midwives into a company. This was effected by the Royal College of Physicians and Dr. Chamberlen alluding to the arguments of his opponents says: "The objection infers this much—because there was never any order for instructing and governing midwives therefore there must never be. Because multitudes have perished therefore they must perish. Because our forefathers have provided no remedies, nor knew any, therefore we must provide none, though we know it. If all our forefathers had subscribed to this argument there had never been beginning to those conveniences we now enjoy, and we had been left to the world's first ignorance and nakednesse." From that day to this proposals have continued to be made from time to time for the instruction and government of midwives, and during the seventeenth century Harvey began his work of raising midwifery into the comparative light which he created.

It was after the invention of the obstetric forceps in the seventeenth century that men midwives began to take up the work in earnest and by the middle of the eighteenth century their number and notoriety had so increased that the competition between them and midwives actively commenced, and gradually midwives fell into disrepute, and men midwives gained a stronger position in the mind of the profession and the public. The death of Princess Charlotte of Wales and her unborn son, a death which led to the ascent of the late Queen Victoria to the throne, did much to accentuate this progress and for the first time in our history a Queen of England was attended in her confinement by a man. The control of the Church over midwives seems to have died out by this and from that time there has been no legal control over them up to the passing of the Midwives Act. The dawn of scientific midwifery was accompanied by efforts of a more or less spasmodic and half-hearted nature to raise the status of midwives and when lying-in hospitals were first established these efforts became more and more continuous and firm and many proposals were from time to time made, stimulated doubtless by the fact that nearly every country in Europe had by this time framed enactments dealing with the instruction and supervision of midwives. In 1813 the Society of Apothecaries appealed to Parliament to legislate on this question but it failed. Unhappily Parliament was so prejudiced against midwives then and long afterwards that "the committee of the House of Commons would not allow any mention of female midwives." Professional feeling also against man midwifery had assumed a strong character and the Royal College of Physicians of London passed a by-law prohibiting any person practising midwifery admission to its Fellowship. "The Obstetrical Society"—the ancestor of the present one—was then started and the object which it adopted as its basis was "the amelioration of the political position of the male and female midwives" and petitions by it were addressed to the Royal College of Physicians of London, the Royal College of Surgeons of England, and the Society of Apothecaries, asking them to cooperate to restrict the indiscriminate practice of midwifery, with the result that the Society of Apothecaries alone was found to be willing to undertake an examination in midwifery but had no legal power to do so. Notwithstanding this it at once presented a memorial to the Home Secretary, praying that it and the Royal College of Surgeons of England (which had already fallen in line with them) should be given the necessary power to institute examinations in midwifery and making it penal for any *man* to practise midwifery unless he was a legally qualified physician, surgeon, or apothecary. Eventually the society succeeded in establishing an examination in midwifery and in the admission of obstetric practitioners to the Fellowship of the Royal College of Physicians of London and to the Council of the Royal College of Surgeons of England. After these its first successful attempts on behalf of the male members of the obstetric profession, the society qu[illegible] contemplated.

In 1843 [illegible] a clause in [illegible] midwifery [illegible] College of Physicians of London established the diploma of Licentiate and made midwifery a compulsory subject, and it was also about this time that the present Obstetrical Society held its inaugural meeting when numerous references were made to the uneducated and uncontrolled condition of women who were allowed to practise midwifery and to the unhappy lot of their patients, and to the excessive mortality in childbirth that was taking place throughout the country. Miss Florence Nightingale took up the question and succeeded in having a lying-in ward opened at King's College Hospital for the supply of material on which to instruct midwives. The juxtaposition of the lying-in cases with the wards containing pyæmia, &c., resulted in a terrible loss of maternal life and the ward had to be closed in 1867. I have already quoted the words used by this benevolent lady in her description of the Shorncliffe and Colchester maternities. About this time the higher education of women also began to be discussed and the first profession to which they tried to gain access was that of medicine, and after many years they succeeded as they eventually do in most matters. This question of sex militated against any progress being made in the different questions of the education of midwives, but in 1864 was started "the Female Obstetrical Society," its objects being: (1) to promote the employment of educated women in the practice of midwifery and the treatment of diseases of women and children; (2) to provide facilities for studying midwifery similar to those given to men; and (3) to establish a recognised board of examiners. At its second annual meeting a resolution was passed complaining of "the utterly unregulated state of female practitioners and the great public inconvenience and frequent loss of life which occurred for want of properly qualified and scientifically trained midwives." During the discussion Dr. Farr is reported to have said that "he believed that the medical profession, however, much as they might oppose female doctors would be glad to see educated young midwives take the place in every district of ignorant old women, and that he hoped to see the day when less than five women die out of every 1000 delivered of children." Dr. Farr's prophecy has been fulfilled.

In 1869 Dr. Farr suggested to the Obstetrical Society the investigation of the causes of infantile mortality, and a committee was appointed and a paper of questions was sent to each Fellow, whereby it was ascertained that "though in small towns the percentage of poor women attended by midwives was not more than 5 per cent. to 10 per cent.; in the large provincial towns and in the villages from 30 per cent. to 90 per cent. of the confinements were in the hands of women. Thus, for example, in East London 30 per cent. to 50 per cent. of the women had no doctor, and in the mining districts 90 per cent." (On comparing these returns with others obtained a few years ago by the Midwives Institute it seems that out of 4000 confinements 2500, or [illegible] were attended by midwives.) At this time [illegible] medical man was not required to qualify in midwifery and only a few examining bodies granted such diplomas and the profession was opposed to a partially qualified woman entering it. Dr. Farr had been for years continually calling attention in his letters in the Appendices of the Registrar-General's Reports to the excessive mortality from puerperal fever that was taking place. Dr. Farr observes: "The deaths by childbirth were 2275, besides 972 by metria in the zymotic class, [illegible] deaths in the aggregate. One mother died i[illegible] born alive." And the physician will, from the same facts, see how much art has to accomplish before the 3000 English mothers who perish annually in giving birth to their offspring can be spared. Natural and adventitious difficulties are in the way but they may in many cases be overcome, for "in sorrow" and not in death thou shalt bring forth children, that is the law of nature (fifteenth report). "The death of young women in child-bearing points to some of the dangers to be guarded against and many of the remaining dangers would be removed by a class of educated midwives" (seventeenth report). In the report of 1856 Dr. Farr presents matters as a little more hopeful and says: "The mortality in childbirth continues to decrease in England and Wales; the birth of every 10,000 living children was the death of 60 mothers in 1847 and of 44 in 1856; thus 16 are now saved in every 10,000 children born. This happy result encourages its cultivators to redouble their exertions" (nineteenth report). "This branch of medicine is cultivated in the present day with extraordinary zeal by men of superior quality; and a society recently has been formed for the cultivation of this important work" (twentieth report). Dr. Farr evidently refers to the formation of the Obstetrical Society. "Many men die of hernia, many women in childbed, who might have been saved by surgical skill" (twenty-seventh report). In the report for 1867 attention is called to (1) the infectious nature of puerperal fever; (2) its connexion with erysipelas and scarlet fever; and (3) to work in the dissecting room, &c., and to the deaths of child-bearing women in towns and country districts. "In towns they are more exposed to puerperal fever; in the country many probably perish from want of skilful help." "Nothing in England approaches the fatality of mothers in Wales, where they must be greatly mismanaged." Further on he refers to the discussion going on in medical circles on the excessive mortality in lying-in hospitals. "Cases in country are in the hands of midwives and men who are sometimes skilful by nature but often are not versed in the art as it is now practised by the skilful. Educated nurses as well as physicians are required to secure the best chance of life of mother and offspring" (thirtieth report). "Thus the contagion of scarlet fever in some cases lights up puerperal disease which has not yet been distinguished from puerperal fever. So does erysipelas and so perhaps do other diseases. The dangers of a general hospital to puerperal women have been revealed by recent experience. Students cannot study in the dissecting-room and at the same time practise midwifery without risk. Nurses are often the medium of the disease, nothing is more fatal than any of the forms of dirt and uncleanliness in the lying-in chamber. When fever comes on disinfectants should be strenuously used. By the greater attention this subject will attract now its full importance is precisely known we may hope to see a great diminution in the risks of childbirth." Here Dr. Farr refers to the closure of the lying-in ward at King's College Hospital and probably to the discovery of Semmelweiss (1847) and specially to the excessive mortality that was annually taking place in our lying-in hospitals. In this year Queen Charlotte's Lying-in Hospital had to be closed on account of an epidemic of a severe and fatal nature lasting for many months.

In 1868 the General Medical Council advised increasing the courses of lectures in midwifery at the various medical schools, so that every student should attend at least 20 cases, and, further, that they should have received instruction in the special diseases of women and children. In 1869 the Obstetrical Society did not actively take up the question of the education of midwives (because probably some of its prominent members believed all midwives to be a mistake and would be soon superseded by men) when Dr. Graily Hewitt spoke of the value of the society as a school of obstetric medicine and said, "It is indeed a question whether it be not the duty of the society to take steps for [illegible] e legislative enactment to check the licence [illegible] in relation to the employment of midwives, many of them quite unskilled and uneducated." About this time a school was established at Sir Patrick Dun's Hospital, Dublin, for the training of midwives attached to the regiments in the English army. This was a great success; six months' training was given, each midwife had to attend from 30 to 70 cases, to attend lectures, and to pass an examination. The establishment of this examination seems to have been a turning point in the whole matter. [illegible]0 the council of the Obstetrical Society passed a [illegible] in favour of the institution of a voluntary examination for midwives but it was not until 1872 that the scheme of such an examination was presented to the society and passed unanimously. The examination was "to consist of practical testing of the competency of the candidates to practise as midwives and the possession on their part of such an amount of knowledge as would enable them to recognise the presence of difficulties and the necessity for at once procuring competent professional aid for their patients."

In 1872 the General Medical Council passed two motions:—

> 1. That a committee be appointed to consider and report whether the General Medical Council has power to make rules for the special education of women, such as may entitle them to obtain a qualification to be certified by the Council and that the committee do report for that purpose whether such qualifications (if any) should be granted.
>
> 2. What are the most desirable means for educating, examining, [illegible] to them, wi[illegible] mid- [illegible] of medical [illegible] and [illegible]

In 1873 the above committee reported that the Council "had not the power to give qualification or to make a special examination for women"; it recommended that in any future Bill for the amendment of the Medical Act *a clause should be introduced giving power to the* Council to register the qualifications of women acting as midwives, dispensers, and superintendents of medical institutions. In the same year the council of the Obstetrical Society referred the matter of examination and registration of midwives to a committee which [illegible] "The Obstetrical Society of London havi[illegible] urgently brought before its notice [illegible] life and health occasioned by the practice of ignorant midwives has already institute[illegible] for testing the knowledge of women [illegible] calling of a midwife and has grant[illegible] who have satisfied the examiners." [illegible] Mr. Ernest Hart was asked by the [illegible] of the Local Government Board to draw up a scheme for the regulation and education of midwives. The matter was then brought before each separate branch of the British Medical Association and a subcommittee was appointed to consider and to modify, if it [illegible] scheme of the Obstetrical Society. In [illegible] eturn—"Laws and Regulations with [illegible] Abroad"—was obtained and this stimulate[illegible] In 1877 the Duke of Richmond's Med[illegible] use which purposed to legislate for the [illegible] ves in England and Wales but this portion of it was [illegible] ed, it might cause confusion between midwives and medical men. In 1882 a Bill was drafted by the British Medical Association but it was never presented to Parliament. In 1889 the General Medical Council resolved:—

> That this Council regards the absence of public provision for the [illegible] n of midwives as productive of a large amount [illegible] tal diseases among the poorer classes and urges [illegible] the importance of passing into law some measure for the education and registration of midwives.

The first Midwives Bill (1890) was promoted by the Midwives Institute, but it was withdrawn on the understanding that a select committee should be formed to consider the whole subject. This committee sat on several occasions but reported without hearing any evidence. The result was that a second Midwives Bill was introduced in

July, 1890, and this was reported to a select committee. In April, 1891, the Royal College of Physicians of London appointed a committee to consider this Bill and in the report which was issued the conviction was expressed that legislative action was desirable in order to secure the due education, examination, and registration of midwives and recommended that a Parliamentary subcommittee should be asked for before which the whole subject might be investigated. On June 17th, 1892, a select committee of the House of Commons reported as follows:—

[illegible]

In August, 1893, another similar committee reported thus:—

> [illegible] and have taken most valuable
> [illegible] t given last year at six sittings,
> [illegible] men and women in various
> [illegible] ountry, and also from trained
> [illegible] listricts. Your committee are
> [illegible] ternal and particularly infant
> [illegible] ffering and permanent injury
> [illegible] inefficiency and want of skill
> [illegible] wives, without proper training
> [illegible] ongst the poor and working
> classes both in the country and [illegible]
> trained midwives have been eminently successful and of great advantage to the community. As proved by the evidence before your com[illegible] are a necessity and consequently [illegible] discourage the practice
> of women [illegible] Your committee are
> of opinio [illegible]
> allowed t [illegible]
>
> protected by inserting in ar [illegible]
> that any woman who produc [illegible]
> a *bonâ fide* midwife at the time of the passing of the Act shall without formal registration be allowed to continue her calling [illegible]
>
> Register either by (a) practice or (b) examination, or by both; (c) the
> [illegible] e conditions of
> [illegible] the opinion of
> [illegible] vy Council, and
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> [illegible] nproved knowledge on the part of
> [illegible]

Lord Balfour introduced a Bill to the House of Lords in 1895. Then came the Midwives Bill of 1898 which followed the lines suggested by the select committee. By this time there was a consensus of opinion that reform could only be effected by legislation. Objections were raised to the Bill by certain members of the profession who urged that all pregnant women should be attended by medical practitioners and who held that no midwives should be created but be allowed to disappear gradually and that monthly nurses should be better trained and take the place of midwives. Others opposed the Bill as they believed it would lead to increase of abortion and infanticide and would endanger the lives of pregnant women and children and interfere with the training of the medical students to practise midwifery. This Bill, however, was not passed and it was followed by one in 1900 by Mr. Tatton Egerton, and the Midwives Bill 1902, which culminated in the Midwives Act 1902. The object of this Bill is "to secure the better training of midwives and to regulate their practice." It was brought in by Lord Cecil Manners, Mr. Tatton Egerton, Mr. Schwann, Mr. Parker Smith, Sir Savile Crossley, Mr. Eugene Wason, Mr. Tennant, and Mr. Heywood Johnstone. Evidence was given which fully proved that it was useless and impolitic to attempt to do away with midwives. It is not the midwives themselves that are to be blamed—it is the medical profession that should be blamed, *and I am always sorry when I hear* midwives maligned as "Gamps" and other disrespectful appellations, and although untrained, unskilled, and unconversant in the principles of aseptic and antiseptic measures as the majority of them are, yet I firmly believe that most of them have done their duty to the best of their skill and ability, and that they have rendered valuable aid to women in travail when medical assistance could not be got in time I can bear my personal testimony. It is clearly therefore our duty certainly not to malign them but to thank them for the good work they have done in the past and endeavour in the future to raise their status, for it will be better for them, for us, and certainly to our country at large. The half a million poor women who cannot afford medical aid in their labour, who are annually confined in England and Wales, I venture to speak for them, hail with delight the passing of the Midwives Act. On the other hand, it *must* be said that the late appearance of such an Act is partly due to the attitude assumed by midwives and to the unreasonableness of their own requests at one time. The *medical profession has for years been like a house divided* against itself on this question, the one portion making all endeavours to procure efficient instruction and training for midwives, the other taking equally strong measures toward their extinction. After a long time, however, the latter class seeing that the majority of their colleagues and the country at large would not do without midwives gave in, or shall I say were conquered, and it is to be sincerely hoped that all members of the profession will unite hands and efforts in making this Act a success throughout the land, especially in country districts.

THE MIDWIVES ACT, 1902.

This Act was passed on July 31st, 1902, and came into operation on April 1st, 1903. It does not apply to Scotland and Ireland. 1. The chief objects of the Act are: (*a*) to secure the *better training of midwives*; *and* (*b*) *to regulate* their practice.

Although one of the chief objects of the Act is to "secure the better training of midwives," yet neither the Act nor the rules *framed by the Central Midwives Board make any* provision whatever or even suggestions how this end may be attained and unless county councils and other local supervising authorities, or private benevolence, with or without the assistance of State funds, come to the rescue, I fear that, as was recently stated in THE LANCET by an experienced medical man, that "our midwives, though under control, will still for a long time be the worst trained and the most ignorant in Europe"; or, as Miss J. Wilson (a member of the Central Midwives Board) puts it: "This is not surprising when we remember the training abroad is not only thorough but is given practically free by the State or the *community*. The supply of candidates therefore in foreign countries presents no difficulty; a small but fixed salary is also guaranteed to the midwife in thinly-populated and remote districts and preference in training in some places is given to pupils who intend to practise among the poor. In England and Wales we must hope that private and public benevolence will take the place of State funds, with the advantage which seems essential to our national satisfaction—which is unknown in foreign countries—of combining voluntary interest with State control and effort. If, however, the work of training is to be adequate to meet the demand the subject should first receive careful preliminary discussion, deliberation, and forethought. Such work to be effectual should be undertaken as a national duty to meet a national need.

There are many schemes already before the public and I will only add mine as a foundation for debate. My views would run somewhat on these lines. I should like to see the formation of a national council for training, the principal functions of which would be to map out the country with a view to the best organisation for training and the provision for midwives, aided by local knowledge; to collect funds; to found training scholarships under approved conditions of binding midwifery probationers for a special period of work in poor districts; to utilise as far as possible our present hospitals; to give grants to districts to help to support a midwife; and, later, to found itself, or to help to support, a national maternity hospital in which the training should be on the best possible lines, specially for midwives for the poor. Considerable funds would be required and the undertaking should combine the best knowledge and experience available and should include the heads of those urban and rural maternity societies which have already done such invaluable work in training midwives for the service of the poor. In short, I should like to see such a council do for midwives' work in England and Wales what has been done in the United Kingdom for nursing by the Queen Victoria Jubilee Institute. I venture to express a hope that if such a council is formed it will not only train midwives but will arrange that their knowledge is maintained and improved. This is a most important part of the system abroad and it is desirable for the maintenance of a high standard of work."

Personally I am sanguine that the training of midwives will be undertaken by county councils and other public bodies. The late Dr. W. N. Thursfield put the matter in a nutshell when in 1893 he wrote: "Public bodies in various parts of the country are providing facilities for the technical training of women in almost every branch, from cooking to music. Training in obstetric nursing would, in some respects, be a typical form of technical training as it would be affording instruction of a kind otherwise out of the reach of those instructed and the skill acquired might be expected to supply a local need and find local employment. Efficient training in obstetric nursing cannot, however, be carried out locally in places most needing it, as to be efficient it must be at some institution where what would otherwise be the individual experience of a lifetime can be concentrated in the experience of a few weeks. Certainly in some way subsidies, to assist suitable women desirous of such training, ought to be forthcoming and if such provision is outside the province of public bodies here is an [illegible] e munificence of private philanthropy [illegible] county council has given to the Midwives Act considerable attention and has delegated its powers without restrictions to an executive subcommittee, with its medical officer as executive officer. The question of the training of midwives is now under the consideration of the education committee and I have reason to believe that a training centre or centres will be established, either by the county council alone or jointly with other bodies, for giving instruction to young women who desire to become midwives, provided they undertake to obtain the certificate of the Central Midwives Board and to practise for some time within the county, as many young women who may desire to take up this work may not be in a position to defray the expenses incurred. I am endeavouring to persuade my county council to include the training of midwives under the term technical instruction and to offer a few scholarships a year to encourage deserving young women to take up the work. With regard to the work of supervision, it is probable that a female inspector or inspectors will soon be appointed.

Many women, however, during recent years, anxious to become efficient midwives, have been trained at our lying-in institutions and elsewhere and have obtained certificates to the effect that they possess the knowledge necessary to fit them for their responsible work but before the passing of this Act it was permissible for any women with or without a good moral character and without having received any instruction whatever to undertake the conduct of any case together with the after-treatment of mother and infant. With a view of obtaining some guarantee that every woman who habitually and for gain practised as a midwife had received and profited by a regular prescribed course of training the Act was passed, chiefly in the interests of the poor. The kernel of the whole Act is contained in Sections 1 and 2 which may be summarised thus: (*a*) From and after April 1st, 1905, it will be illegal for any woman not being certified under the Act to style herself a midwife; (*b*) from and after April 1st, 1910, it will be illegal for any woman habitually and for gain to attend women in childbirth (otherwise than under the direction of a qualified medical practitioner) unless she is certified under the Act; and (*c*) up to the end of March, 1905, women holding certain certificates mentioned in the Act and approved by the Central Midwives Board may claim to be certified. Again, women who can satisfy the Central Midwives Board that they have been in practice for at least one year prior to July 31st, 1902, and that they bear a good character, may claim to be certified under the Act. Candidates not included in one of these classes will be required to pass the examination of the Central Midwives Board before obtaining a certificate.

2. The chief provisions of the Act are: (*a*) the constitution of a Central Midwives Board having certain powers and prescribed duties to perform; and (*b*) the constitution of local supervising authorities whose powers and duties are definitely stated. Provisions are also made for the punishment of offences under the Act and for appeal from any court of summary jurisdiction to the court of quarter sessions. The Central Midwives Board has been constituted and consists of five medical men, three ladies, and one Member of Parliament (appointed by the Association of County Councils).

3. The duties and powers of this Board are: (*a*) To frame rules—(1) regulating its own proceedings; (2) regulating the issue of certificates and the conditions of admission to the Roll of midwives; (3) regulating the course of training and the conduct of examinations and the remuneration of examiners; (4) regulating the admission to the Roll of women already in practice as midwives at the passing of the Act; (5) regulating, supervising, and restricting within due limits the practice of midwives; (6) deciding the conditions under which midwives may be suspended from practice; and (7) defining the particulars required to be given in any notice under Section 10 of the Act. (*b*) To appoint examiners. (*c*) To decide upon the places where and the times when, examinations shall be held. (*d*) To publish annually a Roll of midwives who have been duly certified under the Act. (*e*) To decide upon the removal from the Roll of the name of any midwife for disobeying the rules and regulations from time to time laid down under the Act by the Central Midwives Board or for other misconduct, and also to decide upon the restoration to the Roll of the name of any midwife so removed. (*f*) To issue and to cancel certificates. The Central Midwives Board has been formed according to the provisions of the Act, Section 3 (1), (2), (3), and rules under Section 3 (I.) have been framed and approved by the Privy Council for a period of three years.

The councils of a county or county borough throughout England and Wales become the local supervising authorities over midwives within the respective areas and their duties are: (1) to exercise general supervision over all midwives practising within their area; (2) to investigate charges of malpractice, negligence, or misconduct on the part of any midwife and, should a *primâ-facie* case be made out, to report to the Central Midwives Board; (3) to suspend any midwife from practice if such suspension appears necessary in order to prevent the spread of infection; (4) to report to the Central Midwives Board the name of any midwife convicted of an offence; (5) to supply the secretary of the Central Midwives Board with the names and addresses of all midwives who during the preceding year have notified their intention to practise and to keep a current copy of the Roll of midwives accessible at all reasonable times to public inspection; (6) to report to the Central Midwives Board the death of, or any change in the name and address of, any midwife; and (7) to give due notice of the effect of the Act to persons at present using the title of midwife.

With regard to the constitution of the Central Midwives Board I have one remark to make, and it is this: Would it not have been expedient to have nominated one person on this Board to represent the Incorporated Society of Medical Officers of Health, which in the past has rendered valuable services to the community in the prevention of disease and which in the future will probably be expected to advise as to the best methods of carrying into effect the various provisions of the Act? This is at least a matter worthy of further consideration. I am pleased that there are on this important Board three ladies whose sacrifices and efforts on behalf of the women of England and Wales are well known and that one person has been appointed to represent the Association of County Councils. According to Section 2 any woman who can satisfy the Board that she has been in *bonâ-fide* practice for one year before 31st July, 1902, can claim to be certified, provided that she bears a good character, and I fear that the majority[1] of our midwives will obtain their certificates in this way and among them many that are illiterate, unable to read to write, and to keep the necessary books and records much less to take the temperature, apply antiseptics &c , and perform other duties that will be required of them I feel sure that the Central Midwives Board, having no idea of how the question of the training of midwives would be taken up in the country at large, is experiencing a great difficulty in this connexion, anxious on the one hand not to admit any but competent persons to the Roll of midwives but on the other somewhat afraid that there would not be a sufficient supply of midwives up to 1910 Unquestionably this class of untrained midwife will form a serious problem in the working of the Act Individually many of them have done useful work but there are a large number whose self-confidence is only equalled by their ignorance Up to April 1st, 1905, *any* woman may practise as a midwife but after this date *no* woman shall be allowed to call herself a midwife or any name suggesting competence unless she has earned it by training and obtained an acknowledged certificate, but she will be able to practise with impunity up to April 1st, 1910

Then the final step comes into operation for from April 1st 1910 no woman uncertified under the Act shall habitually and for gain attend women in childbirth, excepting as the friendly assistant in emergency We have therefore the period from now to 1910 (six years) as pointed out by Mrs Heywood Johnstone in which "to review the whole situation and prepare for the change so that, when the 'Gamp and all her train of death sorrow, and suffering passes from our midst, the dawn of a better state of things shall culminate in a sufficient supply of trained midwives who have been taught to care for mother and infant and who will be bound to call in the doctor in cases of disease and abnormality before they have drifted beyond the reach of medical skill The untrained midwives (and excellent women some of them are) will ere this has elapsed have rapidly decreased in number or passed away and the younger ones will either get the requisite training or not care to take up a profession so soon to be condemned Mrs Heywood Johnstone further observes 'Are we creating a vacuum ? Are we to let the law become a dead letter ? Shall the labour of those who have toiled so hard become void, or worse than void in a *new form* of suffering to the poor women who cannot afford and yet imperatively need, assistance in their confinements ?' The same lady further says I am sure it will not be so " Indeed I am not at all sure that it will not be so unless the matter is strongly and prominently brought before county councils and other authorities by medical officers of health and others having at heart the interests of our poor women Doubtless in the case of the 26 county councils and a large number of county borough councils this will be the case but what about the remaining county councils which have not appointed medical officers of health to advise them in these and similar matters ? and, above all, what about the small district councils ? The horizon is very dark and at present I cannot detect a silver lining to it I am aware that great activity has been aroused in some quarters regarding the important questions of the training of midwives and that the number of trained midwives are increasing rapidly, not to speak of district nursing associations that are multiplying throughout the country where poor women can obtain the combined assistance of nurse and medical man

I agree with the suggestion of the Central Midwives Board that a few women conversant with the need of the poor of districts in question should be on every local supervising authority and it is with their aid that we can hope to accomplish what we have in view, for it is within their power to render substantial public service by preparing themselves for the work and combining experience, tact and sympathy with a sense of public duty Much remains to be done "Organisation is necessary that we may bring together the women that wish to be trained the institutions competent to train them and the many parishes crying out for help that do not know how to manage and organise and in some instances sorely need pecuniary assistance A thorough enquiry should be made in each county that we may know what foundations we have to work upon and this should be followed by suggestions and consultations as to the best means to give practical help in all these details and for this I cannot emphasise too strongly how important it is to obtain assistance of those experienced both in the training and the supply of midwives and in the needs of the poor especially the rural poor I have made such inquiries in the administrative county of Glamorgan with the following results —

Number of midwives	about 700
trained midwives	70
Percentage of confinements attended by midwives in colliery districts	80 per cent in mining districts
Deaths in childbirth	53 in 1902
Institutions where midwives may be trained	None except Cardiff union infirmary
Infant mortality rate	Very high average for 1892 1902 = 188 per 1000 births
Early marriages	This is the rule in the mining districts

I now come to the question of the constitution of local supervising authorities and the duties they are expected to perform According to Section 8 county and county borough councils are the local supervising authorities, but according to Section 9 they may delegate their powers (with or without restrictions or conditions) to 1 A committee appointed by them and consisting either wholly or partly of members of the council (and the provisions of subsections 1 and 2 of Section 82 of the Local Government Act 1888 shall apply to every committee appointed under this section and to every council appointing the same and women shall be eligible to serve on any such committees) 2 District councils I am in full agreement with the following "suggestions to county and county borough councils recently issued by the Central Midwives Board, viz —

> 1 The Central Midwives Board suggests to the county councils the advisability of *retaining* the administrative duties assigned to them under the Midwives Act 1902, as far as possible in the hands of a committee directly appointed by themselves This will not only secure for the county council more adequate control over the expenditure but will tend also to prevent the possibility of local rivalries and jealousies interfering with the carrying out of the provisions of the Act
>
> 2 The Board suggests further that the health committee of the county council would form a suitable committee to act as the local supervising authority with power to add to its number from outside the council or otherwise In counties where no county medical officers of health have been appointed it is suggested that a special
>
> it may appoint one or more women conversant with the needs of the poor of the district

I agree that where the county council has already appointed a medical officer of health this officer should be the person to advise the county council in this matter for the supervision required is rightly regarded as at least in part a medical duty I further agree that this committee should be constituted as suggested With regard to counties where there are no county medical officers it is suggested that a special medical adviser be appointed to advise the committee Such a suggestion is very vague and it must have been most difficult for the Board to have made any suggestion at all Who is the medical adviser to be and what must be his qualifications ? Is he to be one of the medical officers of health within the county ? We are not told but I am of opinion that great difficulties will be experienced in persuading county councils to appoint such an officer and I am also of opinion that it would be undesirable and impolitic to appoint a medical officer of health who is also in practice, for such an arrangement would be likely to lead to difficulties arising through friction with his colleagues Where there are whole time medical officers of health in a county it appears to me that such a person or persons should be appointed medical adviser or advisers A county council is not bound to appoint a medical adviser and if it does not the carrying out of the Act must be left to the district councils of the area

I am strongly of opinion that none of the administrative powers conferred on county councils by this Act should be delegated to district councils for the following amongst other reasons 1 If the county councils delegated their powe[illegible] district councils and [illegible] be difficult, if not [illegible] powers and duties are delegated the medical officers of health would probably be the executive officers to these district councils, and it appears very undesirable that he or they (if also in general practice) should in his own district and amongst his own patients be the censor of the conduct and capabilities of the midwives within the area. For a similar reason it seems undesirable that district councils should be called upon to investigate charges of malpractice, negligence, or misconduct, or to suspend any midwife from practice. Many shades of opinion would be imported into every inquiry and it would be difficult to exclude the influence of personal feeling and bias. 3. It is most desirable that the Act should be administered with the greatest uniformity possible, but if the powers and duties are delegated to district councils this end would not be secured. 4. Further, it must be borne in mind that any expenses incurred by a district council in the execution of any powers or duties delegated to them under the Act, shall, to any amount not exceeding such sum as may be prescribed by the county council, be repaid to such district council as a debt by the county council, and until the Act has been in operation for some time it will be impossible for the county council to estimate with any accuracy the expenses incurred in a given district.

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[1] At the end of January 1904 the total number enrolled by the Central Midwives Board was 1600, of these 1079 were *bonâ fide*

The midwife is permitted to attend normal labours only and in every emergency she is compelled to send for a qualified medical practitioner, and as everything will depend on her ability to recognise in time any danger and abnormality in either mother or child it is very important for her training to be thoroughly efficient. It is the duty of the Central Board to regulate the course of training and the conduct of examinations. As Dr. W. J. Sinclair has remarked: "A midwife must no longer trifle with a woman's life or health because she hopes that some vaguely comprehended abnormality may right itself without help or because she fears to expose her ignorance to *the medical practitioner and to the family of her client.* She will find it injurious to her interests to temporise with puerperal sepsis until the patient is moribund, or at least beyond the reach of therapeutic measures; she will not dare to conceal the worst injuries of parturition until remote operations are rendered necessary; she will no longer treat ophthalmia of the new born until the infant must inevitably become blind or give frivolous advice with regard to skin affections which signify a fatal or a curable malady according to the time and method of treatment."

The Central Midwives Board has power to cancel as well as to issue certificates. "No woman certified under this Act shall employ an uncertified woman as her substitute." This is a much needed reform and it entirely forbids the practice of employing substitutes in any shape or form, and will put an end to the abuse of employing ignorant women to do the nursing after the labour is over.

The midwife of the future will not be authorised to grant any medical certificate or any certificate respecting the stillborn. The question of the registration of stillbirths has long been ripe for discussion. The Registration of Births and Deaths Act, 1874, permitted burials of stillborn children to be carried out on the declaration of a midwife or any other person present at the birth. This has undoubtedly led to much social scandal and a fruitful source of undetected crime. The number of stillbirths is at present unknown, but in future the midwife's record must show the number of these cases, and in this way the number occurring in a certain area can be ascertained. Stillborn children are too easily disposed of and many evils and irregular practices are hidden which ought to be investigated. The deaths, stillbirths, and cases of puerperal fever and other infectious disease must be notified to the local supervising authority. No midwife shall undertake the duty of laying out the dead or follow any occupation that is in its nature liable to be a source of infection. The local supervising authority should therefore be thoroughly conversant with the homes of all their midwives and the work which they undertake between cases.

The duty of reporting to the local medical officer of health any notifiable disease rests with the medical attendant as heretofore. It is most desirable also that the medical attendant should be compelled to make a similar notification, on the payment of a reasonable fee, *at once* to the medical adviser [illegible] rity, because this is the only [illegible] officer can obtain the informati[illegible] obtained promptly it is of but little use. In the county of Glamorgan, through the courtesy of the local medical officers of health, I receive weekly notifications, but they are not compelled by law to supply this information. The records of the midwife will show the number of fever cases which have occurred in her practice and the name of the medical man who assisted her; they will show the past record of parturient women should such information be required on some future occasion and the midwife must send a copy of this record to the executive officer. After attendance upon a patient suffering from puerperal fever or other infectious illness the midwife must disinfect herself and her appliances, and have her clothing thoroughly disinfected before going to another case. The local supervising authority may suspend a midwife if such suspension appears necessary to prevent the spread of disease. I consider it desirable that the medical adviser should be empowered by the committee to act promptly and at his discretion in a matter where immediate action is imperative. In Sweden a midwife must abstain from practice for a week after attending puerperal fever and live as much as possible in the open air. I consider that the question of the disinfection of midwives, their clothes, and their appliances is of the utmost importance and that no one should be certified unless they have a thorough practical knowledge of what disinfection means. I hope very shortly to see every sanitary district or groups of districts in Glamorgan supplied with isolation hospitals and in connexion with each such hospital the sanitary committee has insisted on having (1) an efficient disinfecting apparatus and (2) a discharging block, where without coming near any of the nursing staff or patient in the hospital it can [illegible] midwife can have a disinfecting bath. [illegible] trace several cases of puerperal fever to the neglect of disinfecting soiled beds and bedding by local authorities, and I am speaking definitely when I say that disinfection is at the present undertaken in a very half-hearted and deficient manner by some sanitary *authorities.*

A candidate for the certificate of the Central Midwives Board must have reached a sufficient standard of general education to enable her to keep the books and to prepare the records required of her. She must be not under 21 and not over 35 years of age, must have undergone a certain training, and produce a certificate of good moral character. As to training required she must have, under satisfactory supervision, attended and watched the progress of not fewer than 20 labours, making abdominal and vaginal examination during the course of labour and personally delivering the patient. She must have nursed 20 lying-in women during the ten days following labour. She must have attended a sufficient course of instruction and pass an examination, partly written and partly oral, in: 1. The elementary anatomy of the female pelvis and generative organs. 2. Pregnancy and its principal complications, including abortion. 3. The symptoms, mechanism, course, and management of natural labour. 4. The signs that a labour is abnormal. 5. Hæmorrhage, its varieties and treatment of each. 6. Antiseptics in midwifery and the way to prepare and to use them. 7. The management of the puerperal patient, including the use of the clinical thermometer and the catheter. 8. The management (including the feeding) of infants and the signs of the important diseases which they may develop during the first ten days. 9. The duties of the midwife as described in the regulations. 10. Obstetric emergencies and how the midwife should deal with them until the arrival of the medical man. This will include some knowledge of the drugs commonly needed in such cases and the mode of their administration. 11. Puerperal fever, its nature, causes, and symptoms; the elements of house sanitation; the disinfection of person, clothing, and appliances. She must also show acquaintance with the ordinary subjects of elementary education.

With regard to the use of drugs there exists a great difference of opinion but the rules state that she "must enter in a book all the occasions on which she is under the necessity of administering any drug, whether scheduled as a poison or not, the dose, and the time, and cause of its administration." I am very doubtful whether such drugs as opium, morphine, and others should be placed at the discretion of thousands of unqualified persons who are only certified for attendance on normal cases of labour, involving the safety of the public. To possess some knowledge of house sanitation is very necessary, for midwives conversant with the elements of hygiene and the meaning of antiseptic and aseptic precautions will be able to render help to their patients in putting in order their houses, especially the lying-in room. They will be able to teach the value of personal cleanliness and doubtless their work in promoting reform in these directions will have a wide and wholesome influence. "Interest has been recently manifested by the activity of many Members of Parliament by the introduction of projects for remedial legislation and by the work of many associations, and I think it is not too much to hope that indirectly the silent work of educated midwives will prove a wholesome stimulus to the higher classes of society and arouse their sympathy in the great work of improving the dwelling-houses of the labouring classes of our country."

The practical work—i.e., attendance on labour, &c.—must be done under the supervision of a registered medical practitioner or by the chief midwife of institutions recognised by the Board. The certificate to the effect that the applicant has been in *bonâ-fide* practice for at least 12 months prior to July 31st, 1902, and that she is trustworthy, sober, and of good moral character, must be signed by a justice of the peace, minister of religion, registered medical practitioner, or other person acceptable to the Board. I venture to suggest that such a certificate should be signed by two persons, one of whom *must* be a registered medical practitioner.

In the directions to midwives it will be seen: 1. No midwife shall undertake the duty of laying out the dead or follow any occupation that is in its nature liable to be a source of infection. I take it that the last sentence includes the nursing of persons suffering from erysipelas, septicæmia, infectious disease, &c. The duty of enforcing such a clause devolves on the local supervising authorities and there will be a great scope for doing efficient work in this direction. 2. Every midwife must enter in a book particulars of all drugs she uses. 3 She must send for the medical man at once in all cases of abortion, illness of patient or child, or [illegible] during pregnancy, labour, or [illegible] important technical knowledge [illegible] detect these conditions, and hence the value of the required training. 4. Every midwife sending for a registered medical practitioner must state in writing the conditions of the patient and the reason of the necessity for advice. 5. When the death of mother or child or a stillbirth occurs where a registered medical practitioner is not in attendance the midwife shall as soon as possible after the occurrence report to the local supervising authority. It would be wise to insist before admitting any woman to the roll of certified midwives that she has been properly vaccinated.

The records that midwives must keep include: (1) a register of cases; (2) the occasions of sending for medical help; and (3) a case-book with further detail. A copy of (2) must be sent to the local supervising authority within 12 hours. Such records will be most useful for further reference and may be the means of enabling the midwife or the medical attendant to prevent at some future confinement some of the "accidents of childbirth" in the parturient which frequently end fatally.

Regarding the duties of the local sanitary authority the rules read thus: "Whenever a midwife has been in attend- [illegible] from any [illegible] t disinfect [illegible]es to the [illegible] must have [illegible] to another [illegible]pervising [illegible]oiled and [illegible] (by the local sanitary authority) and then exposed to the open air for several days." The difficulty of disinfection will be a serious one in many rural districts in agricultural counties where means for disinfection and isolation have yet to be provided.

[illegible]

ON DIABETIC NEURITIS.

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(Concluded from p. 19)

BESIDES motor and sensory filaments nerves contain filaments belonging to the vaso-motor system and these may become involved in the morbid state appertaining to neuritis. In this way an effect may be produced upon the vascular system, leading to the contractility of the vessels being thrown out of proper working order. Hence the occurrence of local flushings and pallor of an abnormal nature. As a result the hands or feet may become at times hot and florid from dilated vessels or blanched and cold from contraction taking the place of dilatation. Naturally the vessels adjust themselves to the altered positions assumed by a part so that an equable state is maintained whether the limb is held up or hung down, but under a loss of proper vaso-motor nerve power the vessels in the one case may become unduly emptied and in the other unduly distended. Local areas of sweating, referable assumedly to an altered vascular state, are, it may further be mentioned, sometimes noticeable.

Nutritional disordered action is well known to arise from [illegible] secondarily. Besides altered nutrition dependent upon an altered state of the blood-vessels nutritive aberration may arise from the direct effect of loss of the influence of nerve [illegible] tissues. [illegible] of a trophic [illegible] diabetes and [illegible]ith peripheral [illegible]er extremities exists the feet of the diabetic are placed in an exceptionally vulnerable position. A very [illegible] to the establishment of ser[illegible] a more or less extensive loss [illegible] even the loss of life. A nota[illegible] the pain with agonising exacerbations that is ordinarily experienced in the affected part. The pain is out of proportion to what would be looked for simply from the destructive process proceeding but in conformity, it may be said, with the co-existence of peripheral neuritis. There are points of alliance between the condition to which I am alluding and Raynaud's disease and in connexion with the latter authorities believe that neuritis constitutes a factor.

Another trophic lesion is [illegible] from time to time is met wi[illegible] diabetes. A spot of surface [illegible] and remains without exhibiting any sign of healing action. An incrustation may form under which ulceration may proceed and by-and-by a burrowing sinus may be discovered leading, it may be, into the joint of a toe or to denuded bone. Sometimes this condition is attended with such little surface appearance as to lead to surprise being experienced [illegible] has advanced [illegible]ain restricted [illegible]s the requisite healing power to become reinstated and the sore persists in an indolent state. There is usually a prolonged history of peripheral neuritis. For the sake of illustration I may allude to the following cases. A diabetic patient, aged 50 years, who had been for some time the subject of peripheral [illegible] himself with an [illegible] of each great toe [illegible]e, aged 63 years, [illegible]rs and had become [illegible]me with her urine [illegible] passed was very [illegible] the actual amount of sugar [illegible]1 per 1000. This [illegible]ngs was not to be wondered at as she had [illegible] Mellin's food. Upon [illegible] and in addition [illegible]ich she suffered [illegible]ng and stinging pain.

[illegible]n referring to trophic conditions arising from diabetic neuritis but trophic lesions occur also in connexion with diabetes as a primary result of the effect of the sugar abnormally passing through the system. By virtue of the abnormal presence of sugar in the system the nutritive operations are interfered with and various trophic disordered states produced. Amongst these mention may be made of cataract, loosening of the teeth, certain dermatoses including xanthoma diabeticorum, boils, and carbuncles. Indeed, diabetic neuritis is itself a primary trophic lesion due to the effects of the sugar in the system, from which also the textures generally of the body to a greater or less degree suffer.

Diabetic neuritis is a very variable affection with respect to location. Most commonly, as with other forms of neuritis arising from a toxic agency, its development exhibits a symmetrical character. The lower limbs are observed to suffer far more frequently than the upper. The upper and lower may be more or less affected together and somewhat exceptionally the upper may be attacked without any symptoms being experienced in the lower. I have a record before me of a case in which the right leg, the right side of the body, and the right arm as low as the elbow were the seat of neuritic pains without anything wrong on the left side being complained of. The patient, aged 66 years, had been the subject of diabetes for five years and the urine at the time to which I am alluding contained 38 per 1000 of sugar. Sometimes the neuritis is localised to a particular nerve. Sciatica often occurs in connexion with diabetes. It is true, it may perchance happen that the sciatica met with in the diabetic may be consecutive as in other cases to cold or some other incidental exciting cause, but at the same time the sugar in the system may contribute to the production of an increased susceptibility to the influence of the exciting cause and thus render the person more than ordinarily liable to the occurrence of the affection. The brachial nerve may similarly suffer and in each case, if the lesion be severe and lasting, more or less wasting of the muscles involved may be noticed to occur.

Looking at the circumstances existing it is not surprising that we should have a protean class of symptoms to deal with in diabetic neuritis. I have seen cases where the main *seat of trouble has been in the abdominal region.* For example, a patient, aged 67 years, who had been the subject of diabetes for 11 years complained of the frequent occurrence of lancinating or "lightning" pains on the right side of the waist. In addition there existed a tingling sensation in the skin accompanied with hyperæsthesia. I may also cite the case of a patient, a female, aged 58 years, who had been diabetic for five years. The symptoms here were very marked and the urine contained when the patient was first seen by me 41 per 1000 of sugar. The pain was mainly on the left side of the waist. Besides more or less continuous pain frequent sharp flashing pains occurred which were sometimes so severe as to cause the patient to start up and in a moment they were gone. The flesh felt sore and often with a sensation as though the ribs were piercing into it. The skin was acutely tender, so much so that the patient could not bear the crease or the gather of an undergarment against it and was in the habit of placing a silk handkerchief evenly folded over it, whilst the corset required to be worn very loose and sometimes to be removed during the day for obtaining relief from the distress experienced. A smarting burning sensation was another symptom that was frequently experienced, especially when the skin was exposed to the air as in undressing. If suddenly startled by anything a painful sensation immediately darted through the affected part. The legs participated to a minor degree in the neuritic trouble, there being a certain amount of ataxic gait and of sensory disturbance. In the treatment of the case great help was afforded by the continuous galvanic current.

Some few cases have fallen under my notice where anginal symptoms have existed in connexion with diabetes and I have been led to consider that they have arisen from neuritis having attacked the pneumogastric nerves. I thought very seriously of the condition when it first presented itself to my notice but experience has since impressed me with a different view. I have known the cardiac distress to be such as to cause the patient to pull up suddenly in walking and to feel that danger of impending death existed. In one case temporary vomiting at times accompanied the cardiac pain that came on when walking, a circumstance which brought to my mind the joint anatomical connexion of the pneumogastrics with the stomach and the heart. I have found that the condition has sooner or later yielded to diabetic treatment and notwithstanding the threatening aspect that the case may have presented I have not known any bad result to occur. I may further mention that I have seen a few cases of the third nerve being the seat of neuritis with the attendant symptoms of dropped lid and external squint. There being other causes producing this affection it must not hastily be concluded because it happens to occur in a diabetic that it is therefore due to diabetes. It is known, however, to arise from the effect of toxic agencies and this affords *a priori* ground for assuming that it may occur as a result of diabetes. Should evidence be presented of the existence of neuritis elsewhere support may be considered to be given to the local affection under consideration constituting a result of the diabetes, and thence being less serious than might otherwise perhaps be apprehended.

I have spoken of the varied manifestations of disordered action that may present themselves as a result of peripheral neuritis accompanying diabetes and I will now refer to the pathological source of the nerve lesion. Peripheral neuritis, as is well known, is associated with a variety of conditions in which a toxic agent stands as the operative factor. The toxic agent may reach the system from without as with alcohol, lead, arsenic, &c., or be developed within as with the toxins produced in connexion with diphtheria, variola, septicæmia, and some other diseases. Diabetic neuritis is set down in works dealing with the subject to the effect of a toxic agent. I do not question the correctness of this view, but, owing to conclusions based upon misleading evidence, a wrong idea, I consider, has been broached regarding the nature of the agent. In Ross and Bury's work on Peripheral Neuritis at p. 374, where diabetic neuritis is under consideration, there appears the following statement: "All writers on the subject agree that the neuritis does not bear any relation to the amount of sugar in the urine. In many of the cases recorded the amount of sugar has been small: in a case reported by Burns not quite 1 per cent., and in another case between 1 and 2 per cent. Further, the symptoms continue if by strict diet the sugar can be made to disappear from the urine. The above facts seem to indicate that the neuritis is not due to the presence of an excess of sugar in the blood." Such is the groundwork upon which the view has found currency and in a stereotyped way appears in books that the sugar in the system is not the cause of diabetic neuritis. It is further asserted that the neuritis is not attributable to the acetone series of products that often accompany the sugar and to get over the difficulty presented some unknown toxic principle developed in connexion with the diabetes has been brought in and regarded as the morbific agent.

My experience is diametrically opposed to the allegation that has been made acquitting the sugar; and in saying this I am fortified by the ample means for forming a judgment afforded by the frequency with which neuritis occurs in connexion with diabetes. The frequency, it is true, is not equally distributed throughout the field of observation. In the classical form of the disease occurring in young subjects and running a comparatively rapid course, whether from the nerves being less vulnerable to attack or whether from the more limited duration of the condition, neuritis, certainly of a definite nature, may be spoken of as being but rarely seen. In the chronic type of case, however, at middle and advanced age, where the sugar is not kept properly under control it is seldom that the patient goes on for any great length of time without becoming affected with symptoms in some form or other of neuritis. That the products belonging to the acetone series stand outside the question is shown by the occurrence of the neuritis without the products being present. Indeed, it is especially in connexion with the lighter or "alimentary" form of diabetes, the form that is unattended with the presence of the acetone series, that neuritis is particularly found to occur. The converse condition also is often noticed and may be taken for what it is worth. The "composite" class of case, the one in which the acetone group of products is present, is the one in which neuritis is the less likely to be met with. With respect to sugar, this is invariably present in connexion with the supervention of diabetic neuritis. I do not know of such a thing as the supervention of diabetic neuritis in cases where the sugar has been successfully kept under control by dietetic management, although the case may have run on for years. Touching the statement made in the passage quoted regarding the existence of neuritis with the absence of sugar there is a point that requires to be borne in mind.

In the "alimentary" type of the disease the sugar is susceptible of being very speedily and markedly influenced by food The cases upon which reliance has been placed for assuming that sugar is not an essential factor in connexion with the production of neuritis may be taken, I consider, from my experience, to be cases in which the recorded state of the urine failed to represent the state existing at the time the production of the nerve lesion occurred The nerve lesion having become established it cannot undergo a sudden subsidence but the condition of the urine may be rapidly altered and therefore when the analytical examination is made it may simply through the instrumentality of food contain only a little or even no sugar, whilst previously there may have been a large amount In the presence of these circumstances it is easy for an erroneous conclusion to be arrived at unless the observer should be specially on his guard against it

Whilst writing these remarks a case in point has happened to fall under my notice The patient, a man, 63 years of age, had been the subject of diabetes for nine years The onset of the disease was somewhat sharp and severe but by treatment the symptoms became subdued and the patient afterwards continued in a fairly satisfactory state till about a year ago when he began to grow thinner and subsequently noticed, according to his statement to me, that he was at one period passing about a gallon of urine a day He afterwards became the subject of distressing pains and sought medical advice Dieting was resorted to and opium was administered The diabetic symptoms subsided but the pains continued and at this stage I saw the patient through an appointment made by his medical attendant I found that pronounced and very characteristic symptoms of peripheral neuritis existed Night and morning specimens of urine were brought for examination and on these being tested the night specimen gave only a traceable indication of the presence of sugar and the morning specimen none This is by no means the only instance I could relate where diabetic neuritis has existed and adequate sugar has failed to be found in the urine at the time of consultation to account for it From what has preceded it is easy to understand that the event is not an unlikely one to happen

As regards the continuance of symptoms after the sugar has been made to disappear from the urine by the restricted diet—a point advanced against the proposition ascribing the neuritis to the sugar—there is really nothing observable but what might be naturally looked for under the view that the sugar is the causative medium and therefore no necessity to bring into the question the effect of an unknown agent As I have already stated, neuritis does not occur in cases where the sugar is kept under by treatment In cases in which it does occur it goes hand in hand with the sugar but a certain time is necessarily needed when the nerve lesion has become established for it to subside after the disappearance of sugar has been effected The more fixed or deeply rooted the condition the longer it may reasonably be expected will be the time required For relief the getting down of the sugar constitutes an essential matter and when the latter is attained the former may be predicted more or less speedily to follow Recovery having taken place the maintenance of a satisfactory state may be looked for as long as things are kept right as regards the sugar but if the sugar should be allowed to return a relapse is not unlikely to occur A close parallelism exists between alcoholic and diabetic neuritis and in the latter sugar, I consider, may be looked upon as holding the position held by alcohol in connexion with the former

Diabetic neuritis is satisfactorily amenable to treatment if the requisite measures are fully carried out The first and chief point to be attended to is by appropriate dieting to remove or reduce the sugar which is at the foundation of the abnormal nerve state Without the accomplishment of this it is futile to expect that hopes can be entertained of any fruitful result occurring Where, however, the desired object has been attained it is sometimes surprising to see the rapidity with which improvement sets in Much, of course depends upon the extent to which mischief has advanced and the length of time it has existed Frequently I have noticed a few days suffice for comparative ease to take the place of a pre existing state of painful distress Usually in a week or two it may be reckoned that relief from actual bodily suffering will be obtained, but it may take time for the minor symptoms of the neuritis to disappear Exceptionally it may be found that obstinate resistance of some duration is met with and great distress may meanwhile be experienced Conjoined with the dietetic and codeina or opium treatment for the diabetes I have been in the habit of administering with a beneficial effect five grains of the iodide of potassium and ten grains of bromide of ammonium in a suitable vehicle three times daily In the few cases that have failed to yield to these measures I have had recourse with a satisfactory result to the galvanic continuous current Where great superficial pain has existed I have seen benefit conferred by the cautious application of the linimentum aconiti

PATHOLOGICAL SUGGESTIONS.

(1) THE PREPARATION OF MICROSCOPIC SLIDES FOR BLOOD-FILMS, (2) THE POSSIBLE APPLICATION OF FORMALIN GELATIN AS AN ANTISEPTIC AND DISINFECTANT PROTECTIVE SKIN, AND (3) A TRYPANOSOME-LIKE ORGANISM FOUND IN ASSOCIATION WITH SOME CHRONIC PATHOLOGICAL AFFECTION OF THE MOUTH

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(From the Pathological Laboratory, St Mary's Hospital)

1 *On a simple method of preparing microscopic slides for blood-films* —The frequent disappointment, inconvenience, and loss of time entailed upon the microscopic workers by improperly prepared blood films will perhaps justify the publication of a brief note upon a very simple method of getting over the difficulty which arises when the blood which has been spread out upon the slide runs together in such a manner as to leave a system of islands of piled up corpuscles ringed round with spaces of uncovered glass Such running together of the corpuscles, which is currently and superstitiously imputed to the grease on the slide, is simply referable to the smoothness of the surface It can, as I have elsewhere taken the occasion to point out, be remedied by etching into the surface of the glass with a strong caustic alkali or other corrosive chemical

This method of getting over the difficulty involves, however, access to chemicals, the use of a laboratory, and, above all, troublesome forethought All this is unnecessary I now find that the finely roughened surface which is required for the preparation of ideally perfect blood films can be very simply and unlaboriously obtained by rubbing the surface of the slide with emery paper I have employed the finest variety of emery paper and have, in order to obtain the necessary mechanical pressure, mounted the emery paper by means of a rubber ring upon a stout cylindrical ruler In making a film a drop of blood is placed upon a slide thus prepared, another slide is brought down upon it, and as soon as the blood has spread out in the included angle the upper slide is gently drawn along the surface of the lower. The upper slide is held at an acute angle with the lower where a very thin film is to be obtained, at a larger angle where a thicker film is desired

In view of the circumstance that the disc shaped and smaller spherical elements—red corpuscles and lymphocytes respectively—slip easily under the slide when the larger spherical elements—mononuclear and polynuclear white corpuscles—are carried onwards and outwards to the edges and end of the preparation films made as described are ill adapted —unless where certain precautions are observed—for the purposes of a differential count of white corpuscles Where such differential count is desired a line should be ruled with a needle longitudinally from end to end through the equatorial region of the film, and the count should proceed from one end of the equator to the other

2 *On the possible application of formalin gelatin as an antiseptic and disinfectant protective skin* —The fact that solutions of gelatin set into a firm, insoluble, and elastic jelly on the addition of formalin is, if I mistake not, capable of being turned to manifold practical account Taking a 15 to 20 per cent gelatin, liquefying it by the application of heat, making to it an addition of from 1 to 2 per cent formalin and employing it immediately after mixture we obtain a preparation which, when painted over a moist surface, will adhere firmly to it forming a

tenacious, elastic, and insoluble skin. Such a skin is, I think, admirably adapted to the arrest of hæmorrhagic oozing. I have employed it for this purpose with very satisfactory results, painting it upon the gums in a case of hæmophilia where bleeding had persisted for weeks in spite of the local application of adrenalin chloride and ferric chloride.

The formalin gelatin finds, however, its most generally useful application when it furnishes a protective antiseptic skin to denuded surfaces. It furnishes here an antiseptic and insoluble coating which protects the underlying tissues and is not removed by ordinary washing.

Again, inasmuch as pyogenic micro-organisms (staphylococci) have in the experiments I have carried out been rapidly devitalised when imprisoned under a skin of formalin gelatin, it would seem possible that this material may render services to the operating surgeon. Painted upon the skin it might conceivably furnish the aseptic surface which is required. Conceivably the surgeon might carry his incisions through such a film. Again formalin gelatin might prove useful in sealing up operation wounds, especially operation wounds of mucous surfaces.

Where employing the formalin gelatin upon a denuded surface, pain is avoided by applying first a film of simple gelatin and coating this over when dry with the formalin gelatin. When proceeding thus a tube of sterilised gelatin is melted in hot water and applied to the wound with a brush. This done a volume of formalin equivalent to a twentieth of the bulk is added to the remaining liquid gelatin. The 2 per cent. formalin gelatin thus formed must be applied before it has time to set.

3 [illegible] *anism found in association with* [illegible] *fections of the mouth.*—The atten[illegible] observers being for the moment focussed upon the study of the life-history and pathological significance of trypanosomata and allied forms it is perhaps opportune to point out that suitable material for the investigation of these problems may perhaps lie ready to hand. I have in view pyorrhœa alveolaris and other chronic affections of the mouth and the micro-organisms which have been described by French bacteriologists, and in particular by Vincent, under the names of bacillus fusiformis (or hastilis) and spirillum buccæ. The micro-organism denoted by the name of bacillus fusiformis is, I think, clearly not of bacillary nature. Judging from its size (ranging sometimes up to 20 μ), its staining reactions with Leishman's stain (blue staining of the protoplasm and development of three or four chromatin bodies stained red in a characteristic manner), and from the fact that it moves actively through a hanging-drop preparation with an eel-like undulatory movement, the micro-organism would, in spite of the apparent absence of undulatory membrane and flagellum, appear to have affinities with a trypanosome. The resemblance to a trypanosome is heightened when the organism is seen ploughing its way through the corpuscles of a drop of added blood. The micro-organism denoted by the name of the spirillum buccæ is practically always found in association with the above. I have, however, failed to find it in one of three cases of chronic mouth affections in which the so-called bacillus fusiformis has been present in large numbers. The spirillum buccæ as seen under the microscope in a moist film executes incessant whip-like movements which bring up vividly to mind the lashings of the flagellate body in malarial blood. The spirilla here in question do not take the stain deeply when treated with watery solutions of basic aniline dyes.

It may be stated that neither of the above-mentioned forms of micro-organisms has as yet been artificially cultivated.

It has been suggested with regard to them that they may be [illegible] ifferent stages of, one and the same ty[illegible] This suggestion falls in with the fact that in one of the cases of pyorrhœa alveolaris which I have had under examination there were to be seen many forms transitional between the thicker and shorter form denoted the bacillus fusiformis and the thinner and longer form denoted the spirillum buccæ. It is hardly necessary to point out that the suggestion of a common origin for the two forms a[illegible] nnexion with the suggestion o[illegible] e a trypanosoma stage in the [illegible] spirilla. Two furth[illegible] to. (*a*) The first applies to a case where the pathological affection of the mouth takes the form of a chronic herpetiform eruption on the lips and the development of plaques upon the inner surface of the cheek in the neighbourhood of the angle of the mouth and elsewhere. Here felted masses of the so-called bacillus fusiformis are found in preparations made by puncturing the plaques. This is of interest in connexion with the fact that the development of plaques is a characteristic feature in dourine, a form of trypanosoma invasion which affects in particular the genital system of the horse. (*b*) A condition of extreme anæmia whi[illegible] lood infection is often associated wi[illegible] In the two cases I have had under [illegible] each case examined the blood films [illegible] tive results.

In conclusion, I desire to express my thanks and obligation to Captain S. R. Douglas, I.M.S., for valuable help and suggestion in connexion with the investigation of these cases.

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THE TREATMENT OF CONGENITAL EQUINO-VARUS DURING EARLY INFANCY.

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The question of the treatment of congenital equino-varus during early infancy is not only of supreme importance to the patient but also of great interest to the surgeon because of the difficulty in obtaining consistently good results and of the divergence of opinion as to the methods to be adopted. Indeed, few surgical subjects of such antiquity possess so many different principles and multifarious practices at the present day, neither can it be claimed that the literature upon the subject is not full and exhaustive. It is this ambiguity upon the subject that leads to the number of incomplete corrections that present themselves to our hospitals and induces me to record my experience during the year 1903. During that period 53 cases of congenital equino-varus were treated by me. Two cases were so slight that they were treated solely by manipulation. Of the remaining 51 cases, 40 were of the nature of relapsed cases or incomplete corrections, or were primary cases neglected during early infancy. These were all treated as in-patients, some by tenotomy, fasciotomy, syndesmotomy, and manipulation; others by the more severe methods of tarsal osteectomy or subcartilaginous enucleation. The remaining 11 cases presented themselves during early infancy and were treated as out-patients. They represented varying severities of the so-called second degree; in no case could the inversion, adduction, or plantar flexion be temporarily corrected by manipulation, however forcible. The age varied from two weeks to six months, averaging eight weeks. Nine cases were males and two were females. 14 feet were affected, the right foot in nine cases and the left foot in five.

The method of treatment adopted in all these cases was a slight modification of that first introduced by Dr. W. T. Little and afterwards emphasised by Mr. W. Adams. It is usually ascribed to the latter on the continent. It is an amalgamation of the principles of the mechanical method of Scarpa with the practice of subcutaneous tenotomy of Stromeyer. It consists of two stages: (1) the correction of the varus and (2) the correction of the equinus. Stage 1 is commenced as early as possible, in this anticipating the original operation by a few months. It consists of the subcutaneous division of the tendons of the tibiales anticus and posticus and flexor longus digitorum above the ankle-joint with immediate rectification of the varus so far as possible with subsequent manipulation to complete the correction, and in the intervals of manipulation the retention of the foot in the improved position by means of a padded malleable-iron splint. Manipulation at this stage is directed entirely to the correction and over-correction of the varus at the mid-tarsal joint. So long as, at this stage, the tendo Achillis remains taut, all movements in the ankle and astragalo-calcaneal joints are prevented, and we are at a mechanical advantage in overcoming the adduction and inversion at the mid-tarsal joints by being able to manipulate the fore part of the foot upon, as it were, a solid bar of bone extending from that joint to the knee. The method of manipulation cannot be bette [illegible] in the words of Hippocrates [illegible] ub-foot: "In a word, as if [illegible] must bring to their natural [illegible] normally displaced and, co [illegible] g them with your hands and with the bandaging in like manner as to bring them into their natural position, not by force, but gently." The time taken to correct the varus averaged in my series 30 days.

The main advantages of a malleable-iron splint over plaster-of-P. [illegible] carried out at home in [illegible]; (2) if the bandage or [illegible] an be taken off, dried, and reapplied or a second set can be immediately substituted; (3) the mechanical advantage is greater; and (4) the risk of ulceration of the skin is diminished. No ulceration or excoriation occurred in my series.

The second stage is then commenced without delay by subcutaneous division of the tendo Achillis with immediate rectification as far as possible and subsequent manipulation to complete the correction of the equinus, with retention of the foot in the intervals in a padded tin shoe of special design. This shoe has to be worn day and night and is only taken off for manipulation of the foot. It consists of a foot- and leg-piece firmly connected together, the foot-piece being set so as slightly to evert and to dorsi-flex the foot By this shoe the foot is kept in an over-corrected position until the child begins to walk. Manipulation at the ankle is carried out at a great mechanical disadvantage, for the length of the fulcrum measures only from behind the mid-tarsal joint to the centre of the ankle. Care must be taken that an apparent correction of the equinus is not obtained by an over-extension at the mid-tarsal joint. This is liable to occur unless the anterior limit of the fulcrum is persistently borne in mind. The time occupied in correcting the equinus varies more than that of the varus and in my experience is usually longer. It is well at this stage to commence to correct any internal rotation of the leg or thigh by manipulation.

The results of the treatment may be recorded thus: feet with full correction, nine; feet with incomplete correction of the equinus, two; foot with incomplete correction of the equino-varus, one. The deformity in this case is associated with a condition of Mongolian imbecility. Two cases cannot be recorded, as one has left London and the other is in a [illegible] of the internal rotation [illegible] in all these cases.

[illegible] The maximum effect of [illegible] tion of the deformity. Relapse is constantly tending to occur in all and certainly will in some unless means are adopted to prevent that tendency. These means consist of a short daily manipulation, aided in the majority of cases, and in practically all hospital cases, by some form of walking apparatus. Hippocrates clearly recognised and insisted that cure by his method of manipulation was not attained till adult life, for he says, "This, then, is the mode of cure and it requires neither cutting, burning, nor any other complex means, for such cases sooner yield to treatment than one would believe. However, they are to be fairly mastered only by time and not until the body has grown up in the natural shape." The time occupied in the correction is shortened since the days of Hippocrates but not that in the cure.

The treatment of congenital equino-varus may be divided into two main schools: (1) those who treat during early infancy, employing various methods; and (2) those who wait till childhood has well advanced and then correct by one of the various major operative procedures. To turn to the latter first, the arguments used in its favour are the dangers of chloroform during early infancy, the risk of ulceration from pressure of the plaster case, the insufficient support of the latter because it softens with the urine, the long course of [illegible] child suffers pain, and the [illegible] The chloroform argument [illegible] ie risk in the hands of a [illegible] at the age of eight weeks for simple manipulation or tenotomy than it is at the age of six years for an extensive tarsectomy; and, secondly, in ten cases out of 11 in this series no chloroform at all was used. The plaster-of-Paris argument does not apply to this method as it was not used [illegible] ment requires full con[illegible] ing all treatment till, [illegible] performing tarsectomy six years of treatment are avoided, but during those six years the child is crippled and deformed and a lasting impression is liable to be made upon the developing mind. I know of no serious claim for treatment of congenital equino-varus, except after-treatment, by which relapse can be avoided and I hold that no case can be claimed to be cured until the period when all growth has stopped. It is true that cases treated by tarsectomy at this age with subsequent ankylosis relapse less frequently than those treated by methods which retain free mobility of the tarsal joints, but such cases do relapse and it is impossible to say that any one particular case will not relapse; hence it is necessary to bestow care and supervision in all cases treated by tarsectomy and after-treatment in those which show a tendency to relapse. In my experience the most troublesome cases that we have to deal with are those which have relapsed after extensive bone sections and obliteration of many joints and I have grave doubts if the time occupied by the treatment of a series of cases at the age of six years by tarsectomy would be materially less than of a series commenced in early infancy, provided the mothers are stimulated by the surgeon to carry out his simple directions with care, perseverance, and enthusiasm.

In the present series three cases have been under treatment for 12 months and the patients have attended the hospital on the average 16 times, and I anticipate their attendance four times a year until the age of six years, thus bringing the total attendances to 36 in six years. In the case of a tarsectomy we must allow a stay in the hospital of at least 18 days. We can thus see that the figures are not altogether so unfavourable to the early treatment. The pain is slight and is inflicted at a time when the memory is undeveloped and impressions are obliterated at once. Indeed, in their treatment these babies often do not cry at all and if they do the cry is far less vigorous than that caused by the stimulus of an empty stomach. This argument need scarcely be considered further. This school is of recent date and is tending to grow and to cast into oblivion those apparently tedious and protracted means by which the treatment was carried out with steady advancement during the middle third of the last century. It depends upon the perfection of aseptic methods by which the surgeon can adopt more drastic methods with safety to the patient but, as it appears to me, without due regard to the functional activity and æsthetic appearance of the foot.

Far be it from me to minimise the enormous strides that aseptic surgery has enabled us to accomplish in cases of inveterate club-foot of adolescents. Our knowledge of the morbid anatomy has been increased by opportunities for observation during operative proceedings and our treatment has advanced *pari passu* with our knowledge of the morbid anatomy, our results are more certain with our increase in knowledge of the technique of aseptic surgery. All these points have combined to diminish the importance of the advantage, if not the necessity, of treatment during early infancy. I maintain that we should reserve such measures for the all too frequent class of relapsed and neglected cases of adolescence and that we should not be influenced by our success in such cases to slacken our efforts in early infancy.

Turning now to the school that advocates treatment during early infancy the methods are various but usually dogmatic. Thus Erichsen recommends a block-tin splint and manipulation to correct the varus and to convert the compound deformity into simple equinus; then manipulation or tenotomy of the tendo Achillis In a considerable number of cases, he says, the inversion cannot be corrected until the tense structures which maintain it have been divided. Holding that the ligaments of the inner border of the foot play a more important part than the muscles in maintaining the deformity he recommends Parker's syndesmotomy. Accordingly the division of the tendons of the tibial muscles above the ankle has been replaced by the more efficient method of dividing the tense ligaments in the foot itself and by a single operation bringing the foot into the best possible position My experience has so far been that a simple division of the tendo [illegible] flexor longus digitorum, with [illegible] deformity as far as possible [illegible] has sufficed to convert the [illegible] formity in an average of 30 days.

Mr. H. H. Clutton, in Treves's "System of Surgery," advocates manipulation and plaster-of-Paris during the first few months of infant life. If the inversion is in great measure corrected the tendo Achillis and post ligament of the ankle may alone require division. If deformity is uncorrected when the foot has been brought to a right angle or beyond this point he advises Phelps's operation. I think that if the tibial tendons are divided at the commencement of treatment part at any rate of the first few months of infant life are spared manipulation and plaster-of-Paris and if the division of the tendo Achillis is postponed until the varus is completely and not only in great measure corrected Phelps's operation at so tender an age can also be avoided.

The investigations of Parker and Shattock into the morbid anatomy of congenital equino-varus were the first to disturb seriously the ascendancy of Dr. W. J. Little's treatment. Parker advises the division of the tendo Achillis quite early in the treatment of these severe cases, for he says it is impossible properly to gauge the part played by other structures so long as the tendo Achillis remains uncut. The old argument, to leave it quite to the last, that it may serve as a *point d'appui* through which to exert mechanical force on the other structures, is wrong in principle since tenotomy has been introduced. If it prove necessary in any given case it may be taken for granted that the offending structures have not been divided. I have never tried this method in its entirety. I have on a few occasions divided the tendo Achillis before the varus was completely corrected and have found on each occasion the correction of the residual varus troublesome and tedious. I consider that this *point d'appui* is of the greatest advantage in the correction of the varus, for by it we are enabled to mould the cartilage and to diminish the angle of the neck of the astragalus and to straighten out the incurvation of the anterior extremity of the os calcis, both of which points in the morbid anatomy of congenital club-foot were shown by Parker with geometrical accuracy to be offending structures. But I am not aware that he ever divided or advocated division of these cartilages.

And lastly, if we turn for guidance to one of the most modern text-books of the present day we find that Rose and Carless say, "The tibial tendons are usually first divided and the tendo Achillis subsequently, although some surgeons, and especially Mr. Edmund Owen, recommend that the latter should always be first dealt with as this will occasionally suffice alone." No fairer or terser *résumé* of the teaching of the present day could be written than the above, but I must own that if I were confronted on some lone Pacific island with a case of congenital club-foot and given those directions I should be at a loss to know whether to nail my flag to the mast of Mr. Owen's always or to the unrecorded authority for the usual practice.

Bryanston-street, W.

AN EXAMINATION OF APPARATUS PROPOSED FOR THE QUANTITATIVE ADMINISTRATION OF CHLOROFORM.

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AND

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I.—INTRODUCTORY.

THE subjoined contribution to our knowledge of apparatus proposed for the quantitatively regulated administration of chloroform for anæsthetic purposes formed Chapter III. of a laboratory report of "Experiments and Observations relating to the Question of Chloroform Dosage," based upon experiments by Mr. J. H. Wells and by myself, presented to the special chloroform committee of the British Medical Association in July, 1903. It is important that facts and conclusions obtained by independent investigation relating to the question of safe and unsafe methods of effecting anæsthesia should not remain unpublished. I give, therefore, in its original form Chapter III. of the report (methods and apparatus for regulated administration). The chapter in question forms Section II. of the present paper. My further appreciation of the relative safety of the three forms of apparatus actually recommended in this country is an addition confirmed by further experience. It did not exist in the original report and forms Section III. of the present paper.

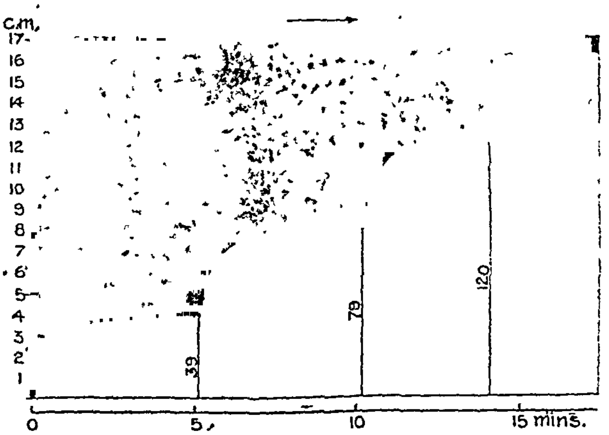
II.—QUANTITATIVE ADMINISTRATION.

The practical recommendation of the Scotch school of anæsthetists, "to give plenty of chloroform with plenty of air," translated into precise language, becomes an instruction to administer the vapour *ad libitum* diluted by from 50 to 100 times its volume of air. The large amount of chloroform used and its free admixture with air produce in effect a large volume of mixture and therefore a more nearly uniform supply to the patient's lungs than when small quantities and a closer method with its necessarily frequent alternations of "off" and "on" are resorted to. The drop method is a first approach towards quantitative administration. We have given considerable attention, therefore, to the definition and measurement of a drop of chloroform. The weight of a drop varies, of course, with the orifice of delivery; it is therefore easy to understand the origin of the very divergent weights attributed to a drop of chloroform by English, German, and French authorities. In Germany[1] an average drop of chloroform is stated by Eschbaum to weigh 38 milligrammes (= 7·6 cubic centimetres of vapour). In France[2] a drop of chloroform is stated by Dubois to weigh 66 milligrammes (= 13·2 cubic centimetres of vapour). Our statement is that from an average pipette, and from a stoppered bottle, the drop of chloroform comes out at 20 and 25 milligrammes (four and five cubic centimetres of vapour), and that from a given pipette a drop of chloroform is a very constant amount. Thus a drop of $CHCl_3$, the vapour of which is inhaled with an ordinary inspiration of from 400 to 500 cubic centimetres, supplies a 1 per cent. mixture of chloroform and air. At 16 inspirations per minute 16 drops, or from 0·320 to 0·400 gramme of chloroform at 1 per cent. dilution in air, would be inhaled and absorbed if the inhalation of the vapour were complete and continuous. And on this estimate anæsthesia should be induced in, say, 10 minutes by an absorption of between three and four grammes of chloroform, or between 2 and 2·6 cubic centimetres (*Anglicè* = from 34 to 44 minims, or less than one drachm). We have regarded this small matter as important enough to deserve careful attention and have therefore made series of weighings of chloroform and of water delivery by various pipettes and bottles. We subjoin a series of weights obtained in grammes per 100 drops of liquid.

	Pipette A.	Pipette B.	Pipette C.	Bottle stoppered.	Bottle unstoppered.
100 drops of H_2O ...	5·700	4·606	2·723	13·597	7·193
100 drops of $CHCl_3$ ...	1·849	1·307	1·275	2·285	2·430

Trial of pipettes of various-sized orifices taught us further (1) to adjust the orifice in the blow-pipe so that a pipette shall deliver as nearly as possible drops of chloroform weighing ten or 15 milligrammes—i.e., hundredths of a gramme or of a cubic centimetre; and (2) to use from such pipettes

FIG. 1.



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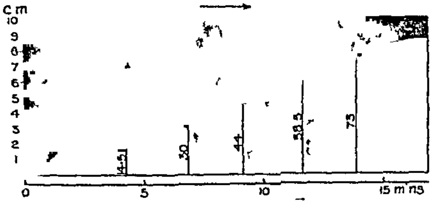
[1] Eschbaum: Deutsche Medicinische Wochenschrift, No. 23, quoted by Dreser in Archiv fur Pharmakologie und Pathologie, Band xxxvii., p. 376.

[2] Dubois: Anesthésie, Paris, 1894, p. 99. The "normal pipette" recently proposed by Yvon (Etude sur le Compte-gouttes Normal, Journal de Pharmacie, 1903) has the following dimensions: Internal diameter, from 0·59 to 0·60 millimetre; external diameter, from 3·00 to 3·05 millimetres; and at the pressure of from two to four centimetres of liquid delivers 20 drops of distilled water to one gramme. The chloroform drop from this pipette weighs 0·0165 gramme; the water drop weighs 0·05 gramme.

the drop of chloroform as a ready and fairly trustworthy measure of a hundredth of a gramme or of a hundredth of a cubic centimetre We subjoin a photographic proof of the degree of accuracy of this measurement of chloroform drops (Fig 1) It exhibits the rise of [illegible] the rise of tension in a closed [illegible] by the introduction of 1, 2 3 a[illegible] a pipette delivering 100 drops [illegible] of the vaporisation [illegible] s mask Chloroform [illegible] heavy as air The next record (Fig 2) exhibits the rise due to introduction of from one to ten drops in a larger closed bottle (1170 cubic centimetres) and incidentally brings out the fact that with increasing density of the little cloud of vapour formed by the successive drops the obstruction to vaporisation increases

FIG 2



Snow's inhaler is set in action by the inspiratory movements of the patient himself Air is drawn into the face piece (and lungs) over chloroform, the surface of which is increased by slips of bibulous paper dipping into the liquid so as to give a mixture of chlorofrom and air that was estimated by Snow to be at 4 or 5 per cent [3] Expiration was provided for by a wide orifice at the face piece inspiratory reflux being there prevented by a valve And in order to provide for the further dilution of the inspired 4 or 5 per cent mixture the expiration orifice of the face piece was arranged to be closed more or less completely by the valve so as to leave a less or more free way for the direct inspiration of atmospheric air thus further diluting the mixture inspired The mixture actually taken into the lungs consisted therefore of two moieties (1) that coming at 4 or 5 per cent over the chloroform surface and (2) that coming directly from the external air At equality of 1 and 2 the mixture inspired was at 2 (or 2·5) per cent with the streams 1 and 2 in the proportion of 1 to 3 or to 4 the mixture was at 1 per cent and so forth Half this value—or 2 per cent —is the normal maximum compatible with effective induction of anæsthesia on the one hand and freedom from unjustifiable danger on the other Snow was working and teaching in 1846 after painstaking observations on himself, and his normal limit was at that time a right and proper statement of opinion But at the present day, by the experience of the last 50 years by the year[illegible] returned in official records and [illegible] he laboratory we are bound to s[illegible] should be induced by the continuous inhalation of chloroform and air between the limits of 1 and 2 per cent The chief defect of Snow's method is however one of which Snow himself was fully aware [4] The ingoing current of $CHCl_3$ depends upon the respiration of the patient and with *diminishing* respiration there is an *increasing* percentage of chloroform inspired The method therefore offers a vicious circle whereby it is certain in conformity with the law of large numbers that a relatively high percentage of accidents must occur in spite of watchfulness by the anæsthetist in spite of the fortunate fact that in given cases 4 or 5 per cent or even more may for a period be administered with impunity Therefore Snow's method and apparatus fell out of use Nevertheless, and chiefly we believe, in consequence of the all but complete abandonment of the attempt to administer quantitatively this potent drug the death rate, as given by the Registrar General's returns, has steadily risen during the last 50 years No doubt the number of cases in which chloroform has been employed has enormously increased and the raw figures of Somerset House are subject to criticism of detail But all discount allowed it remains a reproach to us that cases still occur that can only be referred to ignorance of the power of the drug and of the quantities that are respectively (1) sufficient for anæsthesia and (2) dangerous to life

The apparatus first introduced by Junker in 1860 for the administration of methylene bichloride has been applied to the administration of official $CHCl_3$ and considerably modified for that purpose by various administrators The best known and most widely employed form of apparatus is the model patented and sold by Messrs Krohne and Sesemann It delivers by a face piece freely open to the air, from which the patient inspires definite volumes of chloroform by means of a small accessory pump that drives measured amounts of air through a bottle containing liquid chloroform

In the form of apparatus that we have examined the pump is formed by three elastic balls of a capacity which is intended to be 10 30 and 60 cubic centimetres These amounts are intended to carry into the inspiration ⅙ ½ and 1 minim of chloroform respectively so that on the supposition that the average inspiration of the patient is 400 cubic centimetres the percentage of chloroform in the air of each respiration will be —

10 c.c ball = ⅙ minim $CHCl_3$ = 3 c c. vapour = 0·75% in 400 c.c air
30 c c ball = ½ = 9 c c = 2·25% „ „
60 c c ball = 1 = 17 c c = 4·25%

(This calculation assumes that one cubic centimetre = 17 minims and one minim of $CHCl_3$ = 0·082 gramme yielding approximately 17 cubic centimetres of vapour)

Trials were made under conditions as nearly as possible identical with the conditions of practical application of the apparatus to determine the accuracy of the nominal values Five squeezes of the smallest ball were made delivering approximately 50 cubic centimetres of chloroform-charged air into a flask of 400 cubic centimetre capacity (t = 13·5°C B = 700 mm Hg chloroform flask in water bath at 13·5°) The weight of chloroform delivered to the flask was 0·086 gramme—i e a percentage = 4·0 for five strokes or 0·8 per stroke [5]

A second series of trials was made with the largest ball in a similar way The chloroform found in the flask was 0·064 being a percentage of 3·13 *found* as compared with 4·25 *nominal* and the deficit in practice is even greater than this, as shown by the following series of trials in which the delivery was taken of five successive squeezes —

TABLE I

Temperature of air in laboratory	Weight of $CHCl_3$ in flask	Percentage of vapour in 400 cubic centimetres (nominally 4·25)
15·0° C	0·064	3·13
15·0° C	0·040	1·94
16·5° C	0·046	2·24
17·0° C	0·031	1·53
17·0° C	0·024	1·18

The plan of delivering chloroform vapour into a flask is, we think open to objection our only reason for employing it was that it was desired to use the Harcourt method of combustion and acidimetry as recommended by the chloroform committee for the estimation of chloroform A simpler and more direct method of estimating the amount of chloroform carried over by definite volumes of air pumped through the liquid is to weigh the chloroform vessel before and after each experiment The average loss of weight (calculated from 50 squeezes of each ball) is shown in Table II

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[3] In five trials m[illegible] fs year (1904) the per[illegible]
experiments by Snow
scale of minims and
0·59 0·76, 0·76 0·77
3·2 2·8 and 2·9 Clover
a mixture of $CHCl_3$
later the chloroform
Society recommended
sactions of the Royal
Medical and Chirurgical Society vol xlvii, p 326 1864)

[5] [illegible]
to 1
The
3 2

TABLE II.

Ball.	Average weight evaporated per stroke.	Calculated percentage delivered in 400 cubic centimetres o air.	Nominal percentage in 400 cubic centimetres of air.
Small (10 c.c.) ...	0·016 gramme	0·8	0·73
Middle (30 c.c.) ...	0·036 ,,	1·8	2·2
Large (60 c.c.) ...	0·070	3·5	4·4

The effect of cooling of chloroform by evaporation upon its o be taken into account in the atus and of that of Harcourt. The (Fig. 3) give a series of temperature and weight observations showing the order of alteration taking place in the temperature and in the chloroform delivery when the apparatus is used continuously for any length of time. We thought it necessary to test the alteration of yield (1) by plunging the inlet tube more or less deeply below the surface of the liquid chloroform and (2) by augmenting the area of the evaporative surface.

FIG. 3.

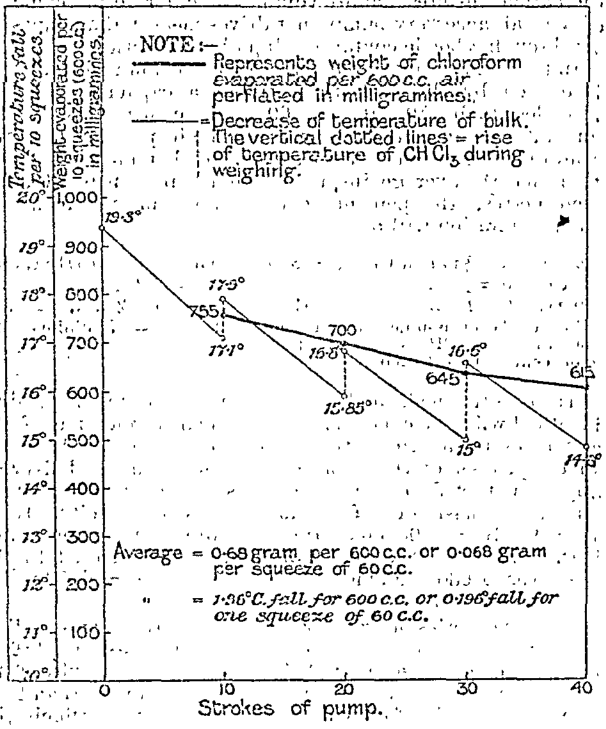

TABLE III.

I.—Variation of depth.

Approximate volume of air perflated.	Average weight evaporated.	
	Depth of CHCl$_3$, 6 centimetres.	Depth of CHCl$_3$, 3 centimetres.
100 cubic centimetres.	0·16 gramme.	0·17 gramme.
300 ,, ,,	0·37 ,,	0·36 ,,
600 ,, ,,	0·66 ,,	0·71 ,,

II.—Variation of surface.—Depth of CHCl$_3$ in both series, three centimetres. Volume of air perflated, 600 cubic centimetres.

Diameter of surface = 35 millimetres. Area = 961·3 square millimetres.	Diameter of surface = 24 millimetres. Area = 452·3 square millimetres.
0·71 gramme.	0·57 gramme.

Estimations of the CHCl$_3$ delivery by Harcourt's tap and bottle.—In our determinations of the percentage of chloroform vapour delivered by Harcourt's second apparatus[6] the the laboratory, the temperature of tle at the commencement of the and the barometric pressure were noted. In order to avoid obstruction of the inlet of the chloroform bottle the thermometer used for reading off the temperature of the chloroform has only been inserted at the commencement and end of the experiment—i.e., not while air was flowing through the bottle. The methods of determination have been by Harcourt's method and also by the densimetric method. In both series of determinations the air was drawn over the CHCl$_3$ by respiration, at about three-fourths of a litre per minute owing to narrow tubing used. A large flask was inserted between the flask in which the mixture was collected for estimation and the mouth. The size of the flask used for collecting has been in most of the experiments 400 cubic centimetres. In the case of the densimetric method the capacity was 250 cubic centimetres and the inlet and outlet tubes were comparatively small. The percentages obtained by the densimetric method will be seen to be high and we put this down to the fact that the current of air passing over the CHCl$_3$ was slow and the room temperature high.

The accompanying tables give the percentages in each series of experiments. For each case, approximately, ten litres of air were inspired through the titration flask:

TABLE IV.—*Examination of a Harcourt Regulating Inhaler Graduated to Deliver 0·5, 1·0, 1·5, and 2·0 per 100.*

Method of analysis.	Position of tap.	Temperature of laboratory.	Temperature of CHCl$_3$ at beginning and end of observations.		Barometer.	Percentage of CHCl$_3$ vapour.
			T$_1$	T$_2$		
By incandescent platinum wire (Harcourt).		°C.	°C.	°C.		
	One-quarter on.	18·5	19·5	18·0	760 mm.	1·168
	,,	16·6	16·0	14·6	754 ,,	1·064
	One-half on.	16·0	16·2	14·0	754 ,,	1·387
	,,	16·0	18·5	15·0	760 ,,	1·303
	,,	19·5	18·0	16·5	754 ,,	1·667
	Three-quarters on.	19·5	14·5	13·0	738 ,,	2·264
	,,	19·5	16·5	13·5	754 ,,	2·065
By gravimetric method (Waller and Geets).		°C.	°C.	°C.		
	One-quarter on.	21·0	17·2	16·0	765 mm.	1·259
	,,	,,	17·0	16·5	,, ,,	1·299
	,,	,,	17·0	16·5	,, ,,	1·279
	One-half on.	,,	17·3	16·2	,, ,,	2·498
	,,	,,	17·3	16·3	,, ,,	2·243
	,,	,,	17·5	16·5	,, ,,	2·234
	Three-quarters on.	,,	17·0	15·0	,, ,,	2·086
	,,	,,	17·8	16·5	,, ,,	2·53
	,,	,,	17·5	16·7	,, ,,	2·51
	Full on.	,,	17·5	16·0	,, ,,	4·211
	,,	,,	18·0	16·5	,, ,,	4·33
	,,	,,	19·0	17·5	,, ,,	4·447

Two control bulbs containing chloroform weighed by Dr. N. H. Alcock, the weight of which was unknown to us until after estimation, were taken. The bulbs were placed inside the combustion flask which was then fitted with its cork and platinum wires. The bulb was then broken by shaking the flask. The amount of hydrochloric acid formed at the end of half an hour's combustion was finally estimated by standard ammonia, the same solution being used as for the previous determinations.

Results:—

1. Weight of CHCl$_3$ taken = 0·0873 gramme.
   ,, recovered = 0·08661 ,,
   Recovery = 99·2 per cent.
   Deficit = 0·8 ,,
2. Weight of CHCl$_3$ taken = 0·0795 gramme.
   ,, recovered = 0·07583 ,,
   Recovery = 95·4 per cent.
   Deficit = 4·6 ,,

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[6] Proceedings of the Royal Society, vol. lxx., p. 504, 1902.

TABLE V.—EXAMINATION OF A HARCOURT'S REGULATING INHALER GRADUATED TO DELIVER 0 5, 1 0, 1 5, AND 2 0 PER CENT. $CHCl_3$

Position of tap	I Total volume of air drawn over the $CHCl_3$	II Total volume per minute at 12 strokes per minute delivered to the pump or animal	III Loss of weight of $CHCl_3$ bottle			IV Percentage calculated from columns I and III		V. Gain of weight of 260 c c densimeter bulb (The + column is the increment, the − column is the decrement on washing out the bulb with room air)				VI Percentage by densimetry		Remarks
				Chloroform flask									VIA	
				Temperature										
			Grammes	Initial	Final				+ Gramme	− Gramme				
Full on	25 2 litres	9168 c c.	2 38	—	—	1 89			0 019	—		1·90	1 89	Temperature 22 7° C Barometer 770 mm
	12 6 ,,	4584 ,,	1 56	—	—	2 48			0 023	—		2 30	2 29	
	8 4 ,,	1834 ,,	1 29	21 8	20 2	3 03			0·031	—		3 10	3 09	
Full on	16 8 ,,	4584 ,,	1 95	22·9	20 6	2 26	Average = 2 05	B	0 0260	0 0250	Average = 0·0203	2 55	2 54	Temperature 22° C Barometer 771 mm
	,, ,,	,, ,,	1 86	22 4	19 7	2 21			0·0284	0·0254		2 69	2·68	
	,, ,,	,, ,,	1 70	—	—	2 02			0 0250	0 0240		2 45	2 44	
Full on	,, ,,	,, ,,	1·63	—	—	1 94		A	0·0160	0·0150		1 55	—	Temperature 22° C Barometer 771 mm
	,, ,,	,, ,,	1·61	—	—	1 91			0 0152	0 0142		1 47	—	
	,, ,,	,, ,,	1·64	19 0	17 3	1 94			0 0150	0 0150		1 50	—	
Half on	<8 4 ,,	,, ,,	1·04	20 8	19 4	1 24	Average = 1 20	A	0 0100	0 0100	Average = 0 0102	1 00	—	Temperature 22° C Barometer 771 mm
	,, ,,	,, ,,	0 99	—	—	1 18			0 0100	0 0100		1·00	—	
	,, ,,	,, ,,	0·99	—	—	1 18			0 0104	0 0104		1·04	—	
Half on	,, ,,	,, ,,	0 93	19 7	18·6	1 17		B	0 0110	0 0100		1·05	—	Temperature 22° C Barometer 771 mm
	,, ,,	,, ,,	1·00	—	—	1 19			0 0106	0 0104		1 05	—	
	,, ,,	,, ,,	1·02	—	—	1 21			0 0094	0·0094		0 94	—	
Full on	16 8 ,,	,, ,,	2 35	—	—	2 80			0·0222	0 0222		2 22	—	Temperature 22 3° C Barometer 767 mm
	,, ,,	,, ,,	1 73	—	17 8	2 06		A	0 0174	0 0164		1 69	—	
	,, ,,	,, ,,	1 89	—	—	2 25		B	0·0256	0 0246		2 51	—	
Quarter on	<4 2 ,,	,, ,,	0 42	21·6	—	0 50		B	0 0045	0·0055		0·50	—	—
	,, ,,	,, ,,	0 48	21 4	—	0 57		A	0·0040	0·0040		0 40	—	—
Three-quarters on	<12 6 ,,	,, ,,	1 41	19 4	—	1 68		A	0·0144	0·0130		1 37	—	—
	,, ,,	,, ,,	1 36	18 8	—	1 62		B	0 0160	0 0156		1 58	—	—
Half on	<8 4 ,,	,, ,,	1·03	—	—	1 23		B	0 0106	0·0104		1·05	—	—
	,, ,,	,, ,,	1·00	18 5	—	1 19		A	0 0100	0·0100		1·00	—	—

Each period lasted 3 minutes 40 seconds except in the first three trials (the first lasted 5½ minutes, the second 2 minutes 45 seconds and the third 1 minute 50 seconds) The densimeter percentages in column VI are simply taken out from the numbers of column V If for greater exactitude we take them out by the formula given by Waller and Geets in the *British Medical Journal* of June 20th, 1903, p 1421—*i e*, *log* P = 1 8391 + *log m* − *log* V + *log* T − *log* H *and introduce corrections for temperature and pressure and for the* full capacity which is not 260 cubic centimetres but 254 cubic centimetres—we obtain from the following abbreviated formula (log P = log m + $\bar{2}$ 9923) the percentages shown in column VI A which it was evidently unnecessary to complete The primary purpose of these observations was to calibrate a Harcourt tap and bottle under the conditions of normal respiration Two further points of value are evident from the results 1 That the densimetric method of estimating the percentage of chloroform in mixtures of chloroform and air is exact as well as rapid, the error does not exceed 0 001 gramme 2 That the agreement between the densimeter percentages and the percentages calculated (column IV) from the relation *weight lost volume of air passed* is sufficiently close to permit the percentage delivery of apparatus to be controlled roughly by this means (Densimeter readings require, of course a chemical balance)

FIG 4

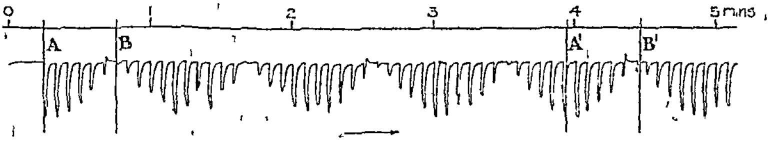
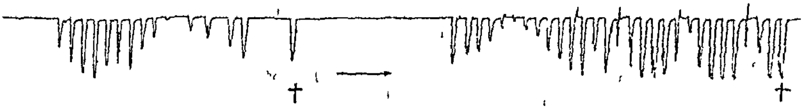


FIG. 5



A third and more complete series of determinations was made of the chloroform delivery of a Harcourt's tap and bottle in its improved form[7] and under improved conditions of observation by the densimetric method: A measured volume of air was drawn through the tap and bottle by a suction-pump giving strokes of measured volume every five seconds—i.e., at a rhythm of 12 per minute. The chloroform bottle was weighed at the beginning and the end of the experiment (column III. of Table V.) affording when divided by the corresponding figure of volume from column I. and multiplied by 200 a first percentage datum of chloroform delivery. A 260 cubic centimetre densimeter bulb on the delivery-tube, weighed before and after observation, gave a second percentage datum. The accuracy of this second datum was verified in some cases by twin weighings, in others by a second weighing after washing out by room air and in all cases by the comparison with the first percentage datum. It is, of course, the percentage of the sample 260 cubic centimetres actually present in the bulb that is taken. It had been found that the delivery of the pump (worked up and down by a wheel) was not constant for each stroke but least at the turning-point of the excursion and greatest at the middle of the excursion. Series of strokes were therefore taken, beginning and ending—A at the turning-point of an excursion, B at the middle of an excursion—so as to have a last stroke with air at minimum and air at maximum velocity in each case. The individual densimeter readings exhibit a slight deficit in A and a slight excess in B, as compared with the [illegible] (Fig. 4.) [illegible] of the pump was regular and very fortunately reproduced a phasic or Cheyne-Stokes rhythm. From our recollection of the variation of $CHCl_3$ tenour of the blood found in one of our experiments in correspondence with that rhythm we were led to examine whether a corresponding and opposite variation of percentage would be detectable in inspired air on our artificial animal with Cheyne-Stokes rhythm. In point of fact we found it did with nominal delivery of 1 per cent. The percentage of a sample taken at A was 0·9 and of a sample taken at B 1·2. With irregular and depressed breathing (Fig. 5), imitated by a pump, the percentage was 1·56, with irregular and augmented breathing it was 0·81; in another experiment at nominally 2 per cent. the reading was 1·67 after polypnœa and 2·78 after apnœa. Obviously these were no true mean percentages but merely qualitative indications of a sudden brief increase or decrease in the percentages taken up by the air in the $CHCl_3$ bottle. I have seen an excess of this apparent origin produce the sudden death of a rabbit.

Brodie's tap.—The ordinary method of chloroformisation used in most laboratories is based upon the same principle as that followed by Snow. The animal breathes—or is artificially insufflated—through a bottle with an inlet and outlet tube—or through a two-necked bottle—containing a little chloroform. The method is well known to be dangerous; animals frequently die even when the operator has been watchful; and the risk is greater with spontaneous than with artificial respiration, because in the former case the percentage of chloroform *increases* as respiration *decreases.*[8] To diminish the risk of this method Brodie[9] has adapted a regulating tap to the delivery tube of the chloroform vessel enabling the operator to dilute the mixture of chloroform and air by a further proportion of air as he may think fit. For the same reason—viz., because of the risk attendant upon the use of chloroform in this manner—I prefer to maintain anæsthesia by ether, using chloroform vapour of known percentage for the induction of anæsthesia. Brodie's tap has, however, fully answered the purpose for which it was designed; we are informed by Dr. Brodie himself that since it has been in use he has never had a chloroform accident. The fact is very intelligible; the estimates of percentage made at his request by one of us (Wells) show that the maximum percentage with the tap "full on" does not exceed 3 per cent. The following figures give the results of trials of Brodie's tap with an air current A driven, B drawn, through the chloroform vessel at the room temperature of from 19° to 20°.

TABLE VI.

Tap.	A, by propulsion.	B, by suction
Half on.	0·65 per cent.	1·66 per cent.
Full on.	1·01 ,,	2·87 ,,

The air driven over by means of an artificial respiration pump came out at a lower chloroform percentage than the air drawn through by ordinary respiration; the difference was due to the fact that a larger volume of air passed through the bottle in the former than in the latter case. No gas meter was at the time available for the determination of these volumes.

Dubois's apparatus consists of a pump delivering continuously at any convenient rate between four and 20 litres per minute air charged with chloroform vapour at the nominal percentages of 1·2, 1·6, and 2·0. In a first rough trial lasting for two hours we found that the apparatus delivered a total volume of air of 1260 litres that took up 90 cubic centimetres, 135 grammes, of chloroform—i.e., 27 litres of chloroform vapour. This was a mixture of chloroform and air at a percentage of 2·14 per cent. (The total quantity of chloroform was ascertained by weighing; that of the air delivered was read off on a gas-meter.) Densimetric readings of samples of the mixture taken during the course of the trial were as follows: 2·0, 2·1, 2·1, and 1·9. We then submitted various animals to this mixture, placing them for the purpose under a bell-jar (capacity of 31 litres) through which the above mixture was driven at the rate of from ten to 20 litres per minute. Anæsthesia of a depth sufficient to permit surgical operation was induced in the following times:—

Minimum	4	minutes.
Maximum	8	,,
Average (37 trials on 24 cats)	5½	,,

In conclusion, I venture to repeat three statements made in 1897 and 1898[10]:—

1. Chloroform is not an uncertain agent. The effects it produces are proportional to the mass in which it acts.

2. For ordinary anæsthesia of the human subject the chloroform inspired should be between the limits of *1* and *2* per cent.

3. Death by chloroform is in the great majority of cases death by simple overdose.

And from the observations now reported to add:—

4. In the three forms of apparatus professing to deliver graduated amounts of chloroform the delivery under laboratory conditions is practically what it professes to be. The choice of apparatus is a matter of clinical convenience.

III.—SUMMARY REVIEW.

The clinical convenience of any given method of graduated chloroform anæsthesia is a far graver matter than mere ordinary convenience. From a clinical standpoint the apparatus that is the most convenient is also the most safe and it is not sufficient in a matter where instant and sudden death may be the immediate consequence of an irregularity of administration to be in possession of apparatus capable of delivering graduated amounts of chloroform under laboratory conditions; that method or apparatus is the safest by which under clinical conditions and in spite of the unavoidable irregularities due to the anæsthetist or the anæsthetised greatest uniformity and regularity of chloroform intake shall be maintained.

The dangers of administration by towel or lint are well known and can be minimised by expert administration. "Plenty of chloroform with plenty of air" is a maxim conducive to safe anæsthesia. And by means of densimetric determinations I have shown that the ordinary percentage of mixture of chloroform and air offered to respiration by this rough method lies between the desired limits of *1* and *2* per cent. The great danger of the method is cramming the chloroform fabric over the patient's face, when the percentage may be 10, more or less—i.e., five times the upper limit of safety.

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[7] I.e., of the instrument patented under the designation of Harcourt's regulating inhaler, sold by Messrs. Griffin and Co.

[8] Worse errors may occur if the operator is careless; in one of our experiments a cat that had been successfully anæsthetised six times was anæsthetised in this way through a tracheal cannula; the animal stopped breathing and was allowed to go on again so as to inspire air that had stagnated in the chloroform bottle so [illegible] accident. The animal died from sudden cardi[illegible] cardiac dyspnœa and could not be recovered [illegible] In another cat, where there was considerable obstruction of respiration by reason of apparatus connected with the trachea to estimate ingoing and outgoing chloroform, a similar "accident" was reproduced with a chloroform percentage = 5·75 (Record of Experiment 23).

[9] Brodie: Proceedings of the Physiological Society, Jan. 18th, 1902.

[10] Brit. Med. Jour., 1897-98.

Of the three apparatus for graduated administration examined above I consider that the order of clinical convenience and safety is (1) the Dubois pump, (2) the Junker apparatus, and (3) the Harcourt inhaler In all three methods the delivery under laboratory conditions is practically what it professes to be but for clinical use each method has merits and demerits of which the general resultant is in my opinion in the order just stated In my experience the principal points in the three cases respectively are as follows

1 *The Dubois pump* —The delivery of a more than sufficient volume of chloroform and air at percentages variable from 1 to 2 per cent is correct in principle and easily accomplished in practice *The induction of anæsthesia is gradual* and regular The depth of anæsthesia is under control There is no immediate danger caused by a brief remission of attention on the part of the anæsthetist and no undue strain of attention is requisite on his part On the other hand the instrument is expensive (£20) and relatively complicated and heavy (weighing 24 pounds) It can be forced or jammed by a clumsy manipulator in which case however the evil effects are limited to the machine and do not increase danger of life The surplus chloroform is inconvenient to anæsthetist and to operator (This inconvenience is however trifling a surplus of 10 litres of 2 per cent mixture escaping into a space of one cubic metre gives a 2 per 10 000 dilution—i e it would take about 420 litres of 2 per cent diffusing throughout an unventilated room 15 feet × 10 feet × 10 feet to give this same dilution of 2 per 10 000) If used on a rickety table the delivery may be irregular this disadvantage can be avoided by the use of a three legged stool

The Junker apparatus (Krohne and Sesemann) —The delivery of a just sufficient proportion of chloroform vapour at the commencement of inspiration is equally a correct principle but practically a very difficult matter to realise The volume of inspiration varies the delivery of a precise volume of vapour varies the precise delivery at the commencement of each inspiration is difficult to secure and the tax upon the attention of the administrator is exceedingly heavy In many instances no regard is paid to the synchronism between inspiration and chloroform delivery sometimes the synchronism is quite impossible to observe The actual strength of chloroformisation must then be considerably in excess of its nominal strength

The Harcourt inhaler (Messrs Griffin and Co) —An intake of chloroform governed by the patient's own respiration is theoretically an unsound principle although it is the first to commend itself for adoption to anyone acquainted with the physical properties of chloroform and with perfect apparatus and a motionless patient it may no doubt be safely employed by an administrator familiar with the physical properties of chloroform The principle cannot however be safely carried out without *close attention to detail on the part of* the administrator and there is in my opinion considerable risk of overdose The mask must fit the face perfectly if air is to be inspired through the chloroform flask With weakening respiration and slower air draft through the chloroform bottle the percentage of chloroform inspired is above the nominal percentage The instruction to avoid splashing is difficult to fulfil unless the bottle is clamped to a fixed pillar and connected to the face piece by a flexible tube as mentioned to be possible A single shake of the bottle momentarily raises the percentage to more than double its nominal value During agitation of the bottle, such as might easily occur in the attempt to keep the mask applied to a restless patient I have seen the percentage as high as five times the nominal value Under these conditions the instrument maker's scale is worse than useless—it is misleading and dangerous The graduation valid under laboratory conditions is illusory under clinical conditions No scale of quantity is preferable to an illusory scale of quantity To keep a watch on the temperature beads is of importance only if other and more important points are not neglected The instrument is very portable (weighing only one and a half pounds) and not expensive (£5 5s)

The recognition of the general principle that chloroform is not an uncertain reagent, and that it produces effects proportional in gravity to the amount of anæsthetic absorbed, *is of capital importance* That principle should not be allowed to depend upon the fortune of any particular apparatus My own opinion was and is at variance from that of the Special Chloroform Committee of the British Medical Association I regard the principle upon which apparatus such as that of Snow Harcourt and others are based with the chloroform intake dependent upon the patient's own respiration as being very liable to accident by overdose Apparatus such as that of Dubois by which an excess of chloroform and air of known percentage is freely supplied by propulsion to an open and loosely fitting face piece is in my opinion more convenient and therefore safer The price and the weight of the Dubois apparatus appear to me to be of secondary importance And even these secondary objections are very easily disposed of An apparatus composed of a three wick lamp delivering from 1 to 3 per cent of chloroform mixture by evaporation answers all the laboratory purposes of the *Dubois and will no doubt like the Dubois prove to be* clinically convenient

Note —I may take the opportunity of correcting an arithmetical slip in Part I of the lecture experiment described in THE LANCET of Nov 28th 1903 p 1481 when it was said that an animal was fully anæsthetised by chloroform absorbed at the rate of 27 milligrammes per minute The total amount of chloroform absorbed was 270 milligrammes of $CHCl_3$ during a period of 7 minutes 40 seconds so that the rate absorbed per minute was 35 instead of 27 milligrammes In Table V there is an apparent error by taking as a percentage datum the relation of column III to column I The error is insignificant and is left uncorrected because it happens to counterbalance a slight temperature error in the opposite direction

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NOTE ON THE CONCENTRATION OF CHLOROFORM VAPOUR IN AIR DRAWN FROM BENEATH A SKINNER'S MASK

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THE subjoined observations were undertaken at the suggestion of Dr A D Waller Their object was to ascertain the concentration of chloroform vapour in air drawn by aspiration from beneath a Skinner's mask in circumstances reproducing in depth and frequency the conditions which obtain when it is drawn from such a mask by respiration of the human subject Aspiration was performed from 10 to 30 times a minute by bellows actuated by a winch and crank and adjusted to aspirate from 350 to 800 cubic centimetres per stroke The aspirated air was sampled in a densimeter *bulb connected to the rest* of the apparatus by indiarubber bags so that it could be stoppered and removed without entrance of atmospheric air [1] The concentration of chloroform in the vapour was determined by weighing the densimeter (*a*) full of air, and (*b*) full of the aspirated vapour and estimating the chloroform from (1) the increase in weight of the bulb due to the chloroform (2) the volume of the bulb and (3) the calculated difference in weight between equal volumes of chloroform vapour and air The second and third factors were so related that at ordinary temperatures and pressures an increase in weight of ten milligrammes indicated 1 per cent of chloroform vapour in the bulb [2] The air stream was maintained through the densimeter in one direction, by means of the valve and returned to the mask by a side tube The mask rested on a folded cloth on which lay the tubes leading to and from the densimeter The amplitude of the aspirations was measured by a spirometer In all observations the temperature of the laboratory was between 15° and 17° C and the height of the barometer was between 755 and 760 millimetres Chloroform was applied to the mask by continuous dropping or by a single douche The concentration of the vapour in the densimeter was substantially constant for an indefinite time during continuous dropping, after a douche it gradually subsided

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[1] Waller Proceedings of the Physiological Society July 1903 Waller and Collingwood Proceedings of the Physiological Society December 1903

[2] This empirical graduation was checked at intervals by the usual correction for temperature and pressure In no case was the correction of sufficient magnitude to suggest its insertion

TABLE I.—*Showing the Fall in Concentration of the Vapour after Douches on Different Fabrics; Amplitude of Aspirations, 500 cubic centimetres; Frequency, 20 per minute throughout the Series.*

Chloroform used.	Number of aspirations before sampling.	Concentration of vapour.	
		With close fabric on mask (flannel).	With open fabric (domett).
1 c.c. douche.	5	1·0 per cent.	1·6 per cent.
,, ,, ,,	10	1·0 ,,	1·5 ,,
,, ,, ,,	20	0·8 ,,	1·0 ,,
3 ,, ,,	5	2·4 ,,	2·9 ,,
,, ,, ,,	10	1·7 ,,	2·3 ,,
,, ,, ,,	15	1·6 ,,	2·1 ,,

TABLE II.—*Showing the Effect of Varying the Quantity of Chloroform applied to the Mask.*

Chloroform applied.	Amplitude of aspiration.	Frequency of aspiration.	Concentration of vapour.
10 drops per min.	350 c.c.	10 per min.	0·65 per cent.
20 ,, ,,	,, ,,	,, ,,	1·0 ,,
30 ,, ,,	,, ,,	,, ,,	1·4 ,,
40 ,, ,,	,, ,,	,, ,,	2·0 ,,
43 ,, ,,	,, ,,	20 ,,	1·1 ,,
55 ,, ,,	,, ,,	,, ,,	1·2 ,,
66* ,, ,,	,, ,,	,, ,,	1·4 ,,
1† c.c. douche.	400 ,,	10 ,,	1·7 ,,
,, ,,	,, ,,	,, ,,	2·1 ,,
3 ,, ,,	,, ,,	,, ,,	2·5 ,,

* 65 drops from the burette employed = one cubic centimetre.
† The estimations in this series were made after ten aspirations.

The concentration of chloroform in the densimeter did not increase proportionally to the amount applied to the mask.

TABLE III.—*Showing the Effect of Varying the Frequency of Aspiration with Amplitudes constant in each Set of Trials.*

Amplitude of aspiration.	Frequency of aspiration.	Chloroform used.	Concentration of vapour.
500 c.c.	10 per min.	3 c.c. douche.	3·2 per cent.
,, ,,	20 ,,	,, ,,	2·8 ,,
600 ,,	10 ,,	45 drops per min.	1·2 ,,
,, ,,	20 ,,	53 ,, ,,	0·95 ,,
,, ,,	30 ,,	59 ,, ,,	0·8 ,,
350 ,,	10 ,,	4·5 c.c. dropped per min.	4·2 ,,
,, ,,	20 ,,	4·25 ,, ,, ,,	3·0 ,,
,, ,,	30 ,,	5 ,, ,, ,,	3·1 ,,

For a given quantity of chloroform used greater frequency led to lower concentration.

TABLE IV.—*Showing the Effect of Varying the Amplitude with Frequencies constant in each Set of Trials.*

Amplitude of aspiration.	Frequency of aspiration.	Chloroform used.	Concentration of vapour.
350 c.c.	20 per min.	55 drops per min.	1·2
700 ,,	20 ,,	69 ,, ,,	1·0
400 ,,	10 ,,	2 c.c. douche.	2·1
800 ,,	10 ,,	2 ,, ,,	2 0
400 ,,	10 ,,	3 ,, ,,	2·5
800 ,,	10 ,,	3 ,, ,,	2·2

For a given quantity of chloroform used, greater amplitude led to lower concentration. The effect of varying amplitude is, however, less marked than that of varying frequency (compare Table III.).

From these experiments it appears that at ordinary room temperatures with moderate and approximately equal quantities of chloroform the Skinner mask yielded vapour of fairly uniform concentration between the desirable limits of 1 and 2 per cent., but reaching as high as 3 or 4 per cent. when the chloroform was copiously applied. The more open of the two fabrics employed gave vapour of higher and, with douches, less uniformly sustained concentration than the closer one. Aspirations of lower frequency and smaller volume led to greater concentration. Comparison of the drop and douche methods showed that a desired concentration is as certainly attained and more uniformly sustained by the former than by the latter.

It is obviously not legitimate to assume that a given quantity of chloroform, whether by drop or douche, would necessarily yield to the human subject vapour of concentration identical with that found above, even if respiration tallied in depth and frequency with the aspiration employed. It is, however, reasonable to conclude that changes in respiration will produce variations in concentration in the same sense as similar variations in physical aspiration, and to emphasise the caution that fall in frequency and depth of respiration may lead to inhalation of dangerously concentrated vapour, even when the amount of chloroform used is apparently not excessive.

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THE MEDICINAL PEROXIDES HOPOGAN AND EKTOGAN.

BY DR. M. FRENKEL.

WHEN presenting these chemical bodies for the first time to the medical world, in a lecture before the Société de Médecine in Paris about 18 months ago, I felt inwardly convinced of the great therapeutic importance of these preparations, a conviction, however, which was based only upon chemico-physiological facts, such as had been referred to in periodical medical literature.[1]

Hopogan is a peroxide of magnesium and ektogan is a peroxide of zinc Both bodies are very rich in oxygen and their formulæ MgO_2 and ZnO_2, as well as their reaction when tested, show the greatest analogy. Both are definite chemical products exhibiting a constant composition. Both peroxides are producers of oxygen in a very active state. In hopogan, which is destined for internal use, the oxygen is combined with a mild base, magnesia; whilst in ektogan, which is destined for external, surgical, and dermatological application, the oxygen is combined with oxide of zinc. The action of the two peroxides which manifests itself physiologically in their peculiar antiseptic qualities is identical. Hopogan is suitable for use as an internal antiseptic, an anti-fermentative for abnormal stomachic and intestinal fermentations. It differs from other internal antiseptics on account of its non-poisonous, non-astringent, and yet powerful germicidal action. The moment that hydrogen peroxide is formed from the magnesium peroxide and acts on the abnormal fermentation-exciters and fermentation-products it is reduced to water, leaving harmless magnesium salt behind. According to Professor Gilbert, clinical experience shows that no acid is required to liberate the active oxygen contained in hopogan but that the ferments existing in the intestinal juice readily bring about the decomposition of the hopogan and the antiseptic effect connected therewith.

Speaking of clinical results, the trials made by Professor Albert Robin[2] seem to show distinctly that hopogan is a specific anti-fermentative and according to its action the probable origin of diarrhœa may be determined. If diarrhœa is caused through abnormal fermentations hopogan acts with absolute certainty, effecting most rapidly intestinal disinfection and reducing, within 24 hours, for instance, the number of motions from 12 to two of normal condition. On the other hand, Professor Robin says that in cases of diarrhœa of serous or vaso-motorial, or nervous, or tuberculous origin hopogan frequently does not act. This result differs from the one which Professor Gilbert[3] obtained with hopogan. He distinctly says that the peroxide "ne s'est pas montré seulement actif dans les affections gastriques, mais nous avons constaté ses bons effets dans le traitement *de la diarrhée en particulier chez les tuberculeux.*"

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[1] THE LANCET, July 26th (p. 252) and Sept. 6th (p. 678), 1902, and Jan. 2nd (p. 35), 1904; Brit. Med. Jour., Jan. 24th, 1903; Medical Review, May, 1904; and Medical Times and *Hospital Gazette*, March 15th, 1904.

[2] Bulletin de la Société de Thérapeutique de Paris, 1904, No. 6, p. 178.

Further observations are needed in order to decide whether hopogan acts as a general anti-diarrhœic or exclusively as an anti-fermentative anti-diarrhœic. Professor Robin, however, describes one case of diarrhœa with phthisis and one with pleurisy successfully treated with hopogan, whilst Professor Gilbert observed rapid success in 11 cases of diarrhœa out of 16 treated with hopogan. The result was negative in one case of tabes dorsalis and in one case of carcinoma of the pancreas in the last stage. In the cases above referred to hopogan was prescribed in the form of keratine capsules in order to obtain the full effect of the active oxygen in the intestines. But with the keratine capsules Professor Robin also combined the treatment with hopogan powder. The dose may be increased from one to three grammes per day.

Professor Gilbert has made numerous trials with hopogan powder and tablets in cases of affections of the stomach produced by abnormal fermentations and in 20 cases out of 22 he has obtained very favourable results. The following conditions were treated: constantly furred tongue, bad taste in the mouth, odourless as well as fetid belching, eructations, sickness, vomiting, and flatulence in the epigastrium accompanied by oppression of the heart after meals. Improvement took place soon after the first or second day, but in order to obtain lasting results the treatment had to be continued for two or three days after disappearance of the last symptoms of illness. During the trials the food of the patients was not modified. Against pains in cases of gastritis alcoholica the preparation was effective in three out of eight. In cases of tuberculous or neoplastic anorexia the result was always negative. Professor Gilbert concludes that it is absolutely due to the oxygen *in statu nascendi* that hopogan has such good effect.

With regard to the action of ektogan Dr. Chaput expresses himself just as categorically. In the treatment of wounds he reported to the Paris Surgical Society some remarkable results. The principle of antisepsis by means of active oxygen is here effectively carried out. The manner of applying the preparation may be in the form of ektogan powder, ointment, or gauze. I will not dwell here upon the details of the copious report and must refer the reader to the original.[4] Suffice it to say that Dr. Chaput concludes his remarks as follows: "Ektogan (peroxide of zinc) is an excellent remedy for the treatment of surgical wounds. It is neither toxic nor caustic; it can be sterilised by heat. When in touch with wounds it develops oxygen continuously. In form of powder, gauze, or ointment it gives excellent results in treatment of aseptic or infected wounds, torpid wounds, eczema, and dermatitis. For uterine and vaginal bandages, ektogan is an advantageous substitute for aseptic and iodoform gauze." It is odourless.

It is satisfactory to find that the good effect of remedies as anticipated by their chemico-physiological behaviour is realised in practical application.

Honfleur, France.

ON THE FREQUENCY OF ASEPTIC NECROBIOSIS OR RED DEGENERATION OF FIBROMYOMATA OF THE UTERUS.

WITH A REPORT OF TWO CASES.

BY FRANK E. TAYLOR, M.A., M.Sc., M.B. VICT., F.R.C.S. ENG.,
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THE ordinary hard fibromyoma of the uterus presents to the naked eye on cross section a white, glistening, satin-like, whorled appearance which along with its distinct and well-marked encapsulation and its contrast with the surrounding pale pink myometrium is striking and characteristic. Equally striking and characteristic is the appearance presented on cross section of a uterine fibromyoma which is undergoing aseptic necrobiosis or red degeneration. The tumour is usually single, with a well-marked capsule, is softish in consistency, distinctly red, mahogany or liver-coloured, fleshy looking, and loose textured, having been compared to raw beef steak. It will thus be evident that attention is immediately attracted to this condition on making a section of such a tumour, for there is nothing in its external appearance before section to indicate its nature. Hence it is remarkable how little attention has been paid to the latter condition, for in the majority of the gynæcological text-books there is not even the slightest hint that this condition does occur.

The subject has, however, been so recently and so fully described by Dr. J. S. Fairbairn, both from a pathological and from a clinical standpoint, in a paper entitled "A Contribution to the Study of one of the Varieties of Necrotic Change, the [illegible]," in the [illegible] August, [illegible] scription and it is therefore unnecessary again to describe the condition. I would rather limit my few remarks, therefore, to the frequency with which it is found.

The only published statistics that I can find in this connexion are those contained in Dr. Fairbairn's paper, which is chiefly based on material obtained in the pathological department of the Chelsea Hospital for Women. During Dr. Fairbairn's tenure of the office of pathologist 105 specimens of uterine fibromyomata were examined in the pathological laboratory and of these ten, or 9·5 per cent., were affected in this way. During the last two years the pathological department of this hospital has been under my charge and 124 specimens of fibromyoma of the uterus have been examined and only two, or 1·6 per cent., were found showing this condition. These figures, along with those from the gynæcological wards of St. Thomas's Hospital, quoted by Dr. Fairbairn may be tabulated thus:—

—	Number of fibromyomata examined	Number of fibromyomata showing necrobiotic changes.	Percentage affected.
St Thomas's Hospital, 1897–1901 ..	88	7	8 0
Chelsea Hospital for Women, Series I.	105	10	9 5
Chelsea Hospital for Women, Series II.	124	2	1 6
Total . .	317	19	6 0

Thus we have a total of over 300 specimens of fibromyomata of the uterus examined which is, I think, a sufficiently large number to give an approximately correct estimate of the frequency with which these tumours undergo necrobiotic changes, and this works out to very nearly 6 per cent.

The two cases showing this condition in the second series from the Chelsea Hospital for Women (for permission to record which I am indebted to the kindness of Dr. W. H. Fenton and Dr. W. F. Victor Bonney) are as follows.

CASE 1.—A married woman, aged 44 years, was admitted into the Chelsea Hospital for Women on Jan. 8th, 1904, under the care of Dr. Fenton, complaining of menorrhagia, metrorrhagia, burning sensations in the lower abdomen, and pain in the back on sitting. Menstruation commenced at the age of 18 years and was quite regular until marriage at the age of 24 years. The performance of this function has always been attended with much pain. The patient had been married 20 years and had had no children but four miscarriages. Ever since marriage menstruation had been very irregular, generally occurring every two or three weeks and scarcely ever going the full month. The loss had always been free and accompanied by clots and much pain. The condition had been much worse for the last 12 months, the flow gradually becoming more profuse until at last it became continuous. For two months before admission, however, there was complete amenorrhœa. For the last two years the patient had noticed a sensation of pressure in the sacrum on sitting and had had paroxysmal attacks of labour-like pains and burning sensations in the lower abdomen. For the last few months there had also been a thin white vaginal discharge. Micturition had been normal and the bowels ha [illegible] oughout. On palpation of the abdomen [illegible] was discovered but vaginal examination re [illegible] of a tumour lying in the pouch of Douglas. The tumour was of the size of the closed fist, was hard, not tender, more or less fixed, and lay in close relationship to the uterus. It gave to the examining finger the sensation given by a fibromyoma. Immediately in front of it was the cervix, which was displaced forwards close to the pubic symphysis.

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[3] Comptes Rendus de la Société de Biologie de Paris, 1904, No. 11, p. 486.
[4] Bulletin de la Société de Chirurgie de Paris, 1904, No. 15, p. 437.

Dr. Fenton opened the abdomen on Jan. 15th and explored the pelvis. A large fibroid uterus was found. The tumour was discovered to be growing chiefly from the posterior wall of the uterus and to be burrowing its way down towards the cervix. The uterus with its contained fibroid was removed by supravaginal hysterectomy. Both uterine appendages were removed along with the uterus. The abdominal wound was sewn up in three layers. Recovery was rapid and uneventful except for a slight rise of temperature on the second, third, and fourth days after operation, the highest point reached being 100·4° F. The patient left the hospital on Feb. 3rd, the twentieth day after operation.

An examination of the specimen removed at operation showed an enlarged uterus with both appendages attached. On incising the uterus its posterior wall contained a single interstitial fibromyoma of the size of a cricket ball which was growing down behind the cervix. It presented the red, liver-coloured, loose-textured appearance characteristic of red degeneration. Both uterine appendages appeared to be perfectly normal. Microscopically the sections were found to take on the stain in an irregular and patchy manner, so that portions of the section showed interlacing bundles of fibrous and muscular tissue, in which, as in undegenerated fibromyomata, the nuclei were deeply stained and the muscle bundles clearly differentiated. In adjacent parts the nuclei were more faintly stained, forming "nuclear ghosts," whilst in other places there was an almost entire disappearance of the nuclei. In these places the muscle bundles had also failed to take the stain well and appeared granular and transversely fragmented, having also a somewhat hyaline or swollen appearance, so that the outlines of the individual muscle fibres can only be recognised with difficulty.

CASE 2.—The patient, aged 40 years, was admitted into the Chelsea Hospital for Women under the care of Dr. Bonney on Nov. 2nd, 1903, complaining of swelling of the abdomen. She had been married four years and was sterile. The catamenia had always been regular, lasting four days, and had been very profuse, necessitating the use of 18 diapers. There were no clots until the last period and there had never been any pain. The first symptom to be noticed was swelling in the left iliac region. This was two years before. The abdominal enlargement gradually increased until September, 1903; since then when "she caught a very severe cold" it had become much larger. There had been an absence of pain throughout. There had been no vaginal discharge and micturition and the bowels had been normal. On abdominal examination a large tumour-mass of irregular outline was found to occupy the lower abdomen and to extend slightly above the level of the umbilicus. It was of very dense consistence and slightly moveable. No souffle could be detected over it. On vaginal examination the cervix was almost obliterated from the universal distension which the uterus had undergone from its occupation by the tumour. It was freely moveable.

On Nov. 10th Dr. Bonney performed abdominal hysterectomy, removing the right, but leaving the left, ovary. Recovery was rapid and uneventful, the highest temperature after operation being 99·6° F., and the patient was discharged from hospital on Nov. 27th, 17 days after operation.

In this case also the tumour was a single interstitial fibromyoma rather larger than the closed fist. It was well encapsuled and of the typical homogeneous mahogany-red colour, having also the faint fishy odour, due probably to the presence of trimethylamine. Microscopically there were the uneven and patchy staining of the sections, the appearance in places of "nuclear ghosts" and the almost entire disappearance of nuclei in other places, and the muscle bundles displaying the granular and transversely fragmented or swollen hyaline appearance, with difficulty of recognition of the outlines of the unstriped muscular fibres so characteristic of this condition.

ADENOMYOMA OF THE UTERUS.

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AND

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ADENOMYOMA of the uterus has escaped proper recognition in this country. With the exception of a paper recently published by Cameron and Taylor[1] we can find no detailed account in British medical literature; since then a few specimens have been shown at the medical societies. We have had the opportunity of investigating several others, some of which are herein referred to, in a comparatively short period of time, a circumstance which leads us to believe that these tumours are not very uncommon and that a routine microscopic examination of uteri, the seat of so-called fibroids, would bring to light many more cases of this interesting condition.

As the name implies, these tumours are new growths composed of muscular and gland elements, the latter typically being imbedded in a richly cellular connective tissue. Situated anteriorly, posteriorly, or laterally in the uterus, subserous, interstitial, or submucous, they have in almost all respects the general macroscopic characteristics of a fibromyoma, with which, indeed, they are sometimes associated, as two of our cases show. There are perhaps only two points which may lead to a diagnosis—the absence of a definite capsule and the absence of whorls so characteristic of fibromyomata. Their commonest situation is dorsally near one or other of the tubal angles. They vary in consistence and have been classified as hard, cystic, soft, and telangiectatic.

The clinical characters are those of fibromyomata, from which we do not think they can be distinguished by examination. Severe dysmenorrhœa and excessive hæmorrhage are, as a rule, marked features and considerably affect the patient's general health. Sterility is by no means an invariable accompaniment and not one of the cases we have seen has been pathologically so, though, according to Freund, the majority are barren. They may have a frail childhood, a laggard puberty, an arrestment of the growth of the sexual organs, and they usually suffer from anæmia. When the tumour occurs in its commonest situation Funke proposes the following as a means of clinical diagnosis: (1) localisation of the tumour at one or other of the tubal openings in the uterus; (2) the diffusely infiltrated consistence of the growth; (3) painfulness on palpation; (4) the severity of the symptoms produced by such a small lesion; (5) the absolutely normal condition of the tube itself; and (6) the improbability of a circumscript infiltration of a part of the uterus amidst healthy surroundings being due to inflammatory processes.

We have little doubt that adenomyomata imperil the life of the patient much more than ordinary fibromyomata. Their association with adenocarcinoma has been noted by several observers,[2] and even in the most regularly formed adenomyomata it is doubtful if one can reckon the possible powers of infiltration. Hysterectomy is therefore the only treatment and when removed successfully the result to the patient is excellent. Castration is useless and in no way influences the tumour growth.[3]

Microscopically they are composed of gland tubules imbedded in muscular tissue. The gland cells may abut directly on the muscular fibres but in the great majority of cases there is more or less intervening cellular tissue. The relative proportion of the constituents determines the consistence of the tumour, hard adenomyoma having a preponderance of muscular tissue, soft adenomyoma being composed mostly of adenomatous and lymphadenoid tissue. The tubules may be much distended and cystic spaces so formed are obvious to the naked eye—cystic adenomyomata. The tubules are composed of a single layer of columnar, sometimes ciliated (see Fig. 1), epithelial cells, each of which contains a single round oval or even rod shaped nucleus of good staining property The basement membrane is intact Where the tubules are dilated the epithelium becomes cubical, flattened or is quite lost The spaces contain clear fluid in which may be found a few red blood corpuscles or the remnants of epithelial cells nuclei with some attached protoplasm Surrounding the tubules is a richly cellular lymphadenoid stroma composed of round spindle shaped or many branched cells with round nuclei—a tissue identical with the extraglandular stroma of the normal corporeal endometrium A varying number of tubules are imbedded in and separated from each other and the surrounding muscle by this cellular mass, there is usually a central acinus larger than the others and their relative position shown in Fig 2 like foot tracks on soil has been described

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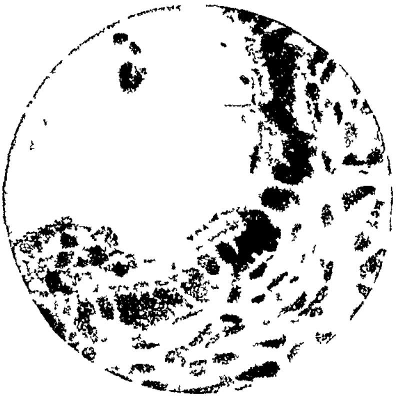
[1] Journal of Obstetrics and Gynæcology, March, 1904.

[2] *Cullen and others.*

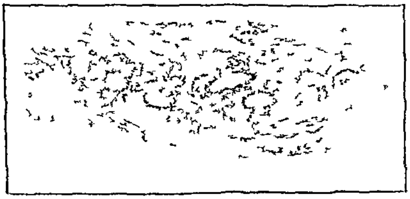
[3] Ibid.

FIG 1



Section showing gland epithelium and surrounding lymphadenoid stroma Near the centre the cilia are shown (From Case 4)

FIG 2



Camera lucida drawing of a glandular islet surrounded by muscle

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separated by muscular strands In the same section one may find both conditions—the association of several acini in a cellular islet and the direct juxtaposition of gland and muscle without intervening stroma In tumours belonging to the latter type there is a tendency to intraglandular inversion of the epithelium a fold of epithelium still keeping its basement membrane intact grows into the lumen and is approached by a similar plication from the opposite side the epithelial summits meet and losing their epithelium coalesce and the basement membranes offering no resistance the two processes of ingrowing fibrous tissue become continuous At other parts in place of complete glandular subdivision such as this there is a simple intracystic growth a more or less dichotomous branching of the inverting epithelium The infiltrating character of the growth combined with this tendency seems to us to raise it from the category of typically simple tumours As in fibromyomata the relative proportions of muscular and fibrous tissue vary Well formed blood vessels frequently with hypertrophied coats, are found in the muscular tissue as well as more delicate vessels in the cellular islets, in the very soft telangiectatic variety of adenomyomata the blood vessels are extremely numerous and there may be dilated blood spaces Frequently perhaps in the great majority of cases a definite connexion between the gland containing cellular islets and the endometrium is to be found the utricular glands and interglandular stroma dipping down into the myometrium, evidently continuous with the glandular constituents of the tumour A microscopic section would of course show several of these endometrial inclusions as islets completely surrounded by muscle This encroachment of endometrium on myometrium is not uncommon in hypertrophic endometritis and sections of the latter might show an occasional inclusion but we do not think the presence of such merely directly under the endometrium in the absence of any definite tumour formation would justify the name of adenomyoma

The cases here related will illustrate the foregoing sketch

CASE 1 —We are very grateful to Mr J Bland Sutton for this case The patient was 49 years of age and had sought advice for severe hæmorrhages occurring over a period of three years She was a multipara and her last pregnancy occurred six years previously The diagnosis of fibromyoma of the uterus was made and consequently supravaginal hysterectomy was performed The uterus was five inches in length and before section the appearance denoted the occurrence of an intramural fibroid However on section no capsule to the growth could be observed and the whole wall could be differentiated into three layers 1 A layer of ragged endometrium 2 A mass of striated tissue the fibres of which intersected each other in all directions The absence of whorling was readily noticed 3 A layer of ordinary uterine muscle about one third of an inch in thickness This condition existed in the whole uterine body On microscopic examination the growth was found to be characteristic of adenomyoma Gland spaces occurred throughout the sections an abundant stroma resembling in every detail the tissue met with immediately under the lining epithelium of the uterus separated these tubules from the surrounding fibro muscular structure The epithelium of the tubules was columnar in shape and these were placed on a basement membrane which at every part was quite intact No cilia could be detected in any of the spaces but the epithelium otherwise resembled that of normal endometrium At certain parts the endometrium could be seen dipping into the uterine wall so that here and there the rich lymphadenoid tissue around the acini communicated directly with that in the endometrium At other parts the muscular fibres of the uterus could be seen encroaching on these peninsula like ingrowths and eventually on the muscular fibres becoming approximated an islet consisting of uterine endometrium lay inclosed in muscular tissue

CASE 2 —For the kind permission to use this case we are indebted to Mr F B Jessett The patient was aged 33 years She had been married 11 years She had had two children and two miscarriages Her previous health had been good and the menstrual history was unimportant Three years previously when five months pregnant she fell

from a train she was not

consequently aborted Sh

months with pelvic pain

since menstruation had bee

or four severe floodings

nine or ten days without some hæmorrhage There were no bladder or rectal symptoms She was not markedly anæmic The uterus which was removed by vaginal hysterectomy was of about the size of a three months pregnancy The cavity was three and a half inches long by one and a half inches broad towards the middle The walls were thickened on all sides especially ventrally where the distance from serosa to mucosa was two inches There was no encapsulation of this part Three strata could be determined—a layer under the endometrium a quarter of an inch thick a roughly reticulated stratum in the middle and an external regular muscular layer half an inch thick Two small polypi of the respective sizes of a filbert and a pea were found projecting into the cavity near the fundus (Fig 3) Microscopically the tumour consisted of muscular tissue the

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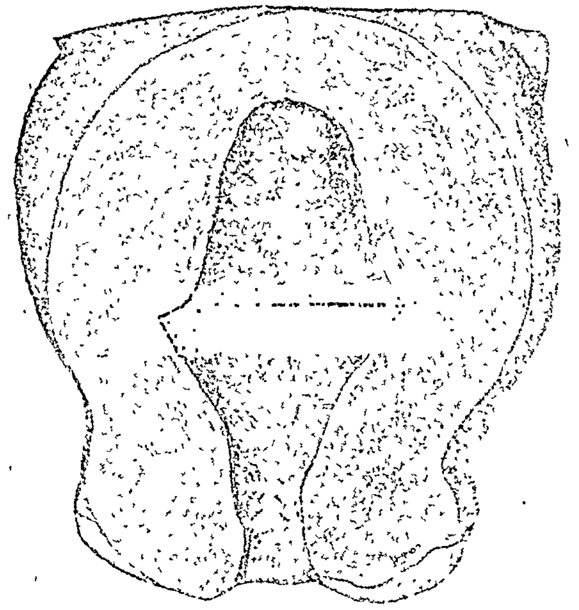
4 Ibid

strands running in all directions, and a relatively smaller proportion of well-formed gland tubules. There was practically no lymphadenoid stroma around the epithelium and, save for the intervention of a few connective tissue fibres at parts, it rested directly on the muscle. The epithelial cells were cylindrical and their nuclei lay close to the basement membrane. There was a tendency to intraglandular plication so that the contour towards the lumen was a wavy circular line. The fibrous tissue and muscular stroma followed these indentations. There was no round cell infiltration anywhere observable. The muscular stratum under the serosa was free from gland canals.

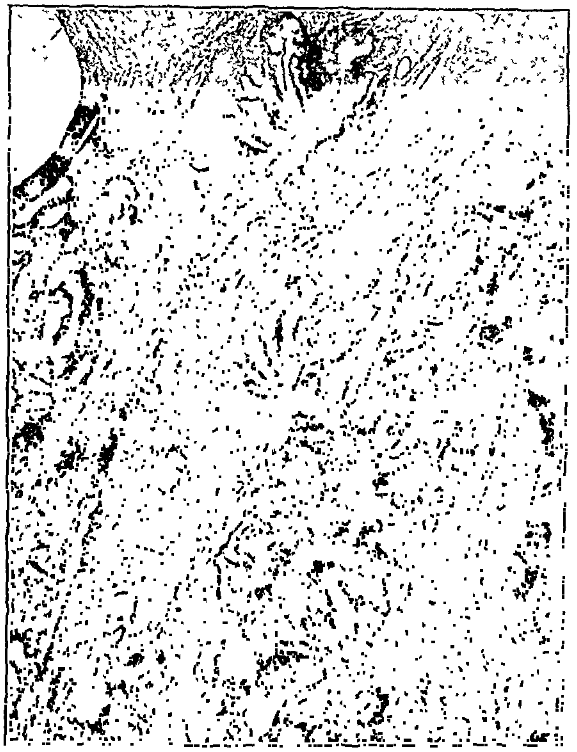
FIG. 3.



Adenoma uteri diffusum benignum. (Mr. F. B. Jessett's case.)

CASE 3.—For permission to make use of this specimen we are indebted to Professor Murdoch Cameron and Dr. Alexander McLennan. It was removed from the anterior lip of the cervix by Professor Murdoch Cameron who described the appearance of the tumour at the time of its removal as resembling very closely a multilocular cyst. The patient had all the symptoms which are found in association with intra-uterine polypi. The tumour attained the dimensions of a cocoanut and on examination it was exceedingly like a multilocular ovarian cyst, the superficial parts of the tumour being raised into irregular masses by cystic cavities in the growth varying from the size of an orange to very minute glandular spaces. The covering of these cysts was very thin, while the portions intervening were of firm consistency. On section it was found to be composed for the most part of cavities which contained mucus and here and there free communication existed between neighbouring spaces. The fluid on boiling did not coagulate. These spaces were separated by tissue which to the naked eye seemed to be fibromyomatous and in a somewhat œdematous condition and on microscopic examination these portions were found to be in a degenerated condition, the stain being faintly taken up. The cystic spaces were found to be singularly beautiful in the perfection of their structure, resembling very closely the microscopic characters of an ovarian cystadenoma. The glandular spaces were lined by a perfectly uniform row of columnar epithelium which had an intact basement membrane resting directly on the surrounding fibro-muscular tissue. At the base of each cell there was a single nucleus which took up the stain readily. In many of the spaces well-marked papillomatous projections existed which extended in the more marked papillæ almost to the opposite wall of the cavity, a strand of fibro-muscular tissue following the epithelium into the lumen. Such was the degree of projection at certain portions that the apices of adjacent papillæ met and the epithelium at the point of contact disappeared, so that a space was thus formed in a secondary manner from these two papillæ. This space resembled the original glandular formations in every respect. The formation of such an adenomatous structure is exac[illegible] [illegible] it which is found in the tubes in certain [illegible] In other spaces the projections were extremely small, so that the lining epithelium had simply a number of small undulations next the lumen. In some of the larger cavities where cystic distension had been very great the epithelium had completely disappeared and here and there a few flattened cells represented what was once a well-defined cylindrical epithelium. In such spaces the fibro-muscular tissue formed for the greater part the limits of the cavity. A cervical adenomyomatous polyp of such dimensions as the above must be of very rare occurrence (Fig. 4).

FIG. 4.



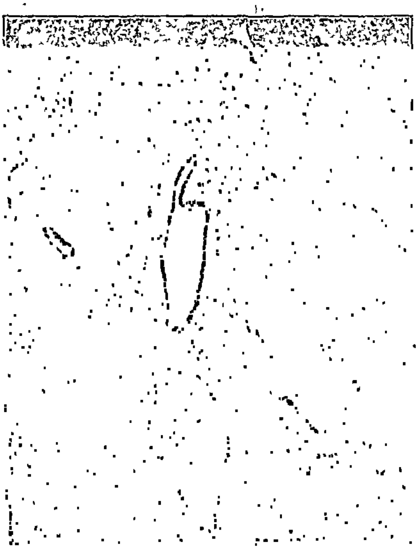
Section of a cervical adenomyomatous polypus showing subdivision of gland spaces.

CASE 4.—The patient was aged 39 years, married, and the mother of four children. She had been delicate in childhood. Menstruation had started at 14 years of age. She had always been regular save for the intermissions of pregnancy but the periods had always been of long duration, nine days on the average and fairly copious. She was blonde and pale. Lately, the onset of the period had been accompanied by severe pain referred to the lower part of the abdomen and there had been severe hæmorrhage at and between the periods. The uterus was not felt to be enlarged bimanually but painful under the examining hand on the fundus. The ovaries appeared to be normal and were not painful; the tubes were normal. Bimanually, with one finger in the rectum, the fundus uteri towards the left was excessively tender. There was no bladder trouble. The patient was of a constipated habit and required to keep the bowels loose by medicine to obviate pain on defecation. Laparotomy was performed and the uterus was removed. The uterus was normal in size but on the fundal angle just behind the uterine junction of the left tube there was a slightly raised flat whitish circular patch under the intact peritoneum. In cutting into it it was hard to the knife, almost regularly hemispherical, and approached the cavity on its inner convexity. It was of about the size of a half walnut. It was circumscribed by normal uterine tissue. It appeared to be a fibromyoma and its true nature was only discovered after microscopic section; consequently we were not so careful as we might have been in the rough section and though serial sections were afterwards made in no case unfortunately was one obtained without muscular strands intervening between the endometrium and the tumour proper. Microscopically the tumour was composed of bundles of muscular tissue running in various directions, inclosing and separating from each other, many well-formed circular, oval, or irregularly shaped gland acini. In the smaller tubules the epithelium was columnar, in the larger cubical, and each cell was occupied by a round or oval nucleus. The epithelium, too, at various parts of the tumour was ciliated (Fig. 1). At some parts there was a fair amount of lymphadenoid stroma between the acini and the muscle, at others the epithelium abutted directly on the muscle. Seldom were two sections of gland tubules found in the same islet. The blood-vessels were fairly numerous and had hypertrophied walls. Gland cells existed quite close to the serous coat. The endometrium was apparently normal.

Several theories of origin have been put forward. The inevitable microbic origin has received the support of some French observers mainly on the slender ground of occasional leucocytosis. Cullen has described the presence of giant cells but no tubercle bacilli have been found. Eschoff considers that the peritoneum covering a myoma may dip into it, be cut off, and by proliferation form the adenomatous constituent. [illegible] probability of metaplasia of [illegible] It has received no independent support. Most continental and American observers refer the tumour to mucosal origin. Von Recklinghausen[5] was strongly of opinion that uterine adenomyomata almost exclusively owed their origin to persistent remains of the Wolffian duct and of his 33 cases referred only one to a mucosal origin. In early fœtal life the Müllerian and mesonephric ducts lie in close proximity from the kidney to the urogenital sinus. Below, the Müllerian ducts coalesce to form the uterus and vagina; above, diverging, they form the Fallopian tubes; and it is at the uterine junction of the latter with the uterus that the Wolffian ducts lying dorsally come to have an intimate relation with the uterus. Persisting as rudimentary canals in ruminants and swine—Gärtner's canal—the Wolffian duct in the human adult has as a rule entirely disappeared except the terminal portion inclosed in the substance of the neck of the uterus and still distinguishable but only by means of cross sections as an extremely narrow tubule (Beigel, H. Dohrn). Rest cells derived from the Wolffian ducts have been found under the serosa, especially near the tubal angles, by Klein and others. Adenomyomata have been found over the course of the Wolffian ducts—in the Fallopian tubes, broad ligaments, and vagina. The glandular elements arising from the Wolffian remains in the uterus would stimulate a hyperplasia of the muscle and thus form the other element of the tumour. This explanation of von Recklinghausen would seem to account for subserous adenomyomata towards the uterine cornua posteriorly but it breaks down with regard to submucous adenomyomata, dorsal or ventral, or more or less generalised growths. The evident connexion between the endometrium and the glandular islets of the tumour and the identity of their component parts seen in so many cases make the mucosal origin of these practically certain, and even [illegible] ble [illegible] uld [illegible] it is unlikely that perfectly formed tubules of such a highly specialised structure as ciliated epithelium could originate from embryonic remains, which have presumably long lain dormant, and the fact that cilia are present in a tumour which has intact peritoneum over it seems to point strongly to a connexion with the uterine cavity. The failure to establish an endometrial connexion in a microscopic preparation may be due to the fortune of the particular section and the connexion might be revealed by serial sections, but if even then it is not obtained a mucosal origin is not negatived, for by the growth of the muscular constituent the tumour might be insulated. The presence or absence of a lymphadenoid setting of the acini does not point either way, for in Case 4, where no endometrial connexion was determined by the sections, there was at parts more or less lymphadenoid stroma, and in Case 3—a polypoid growth—and in Case 2, where there was presumptive evidence of endometrial origin, there was practically none.

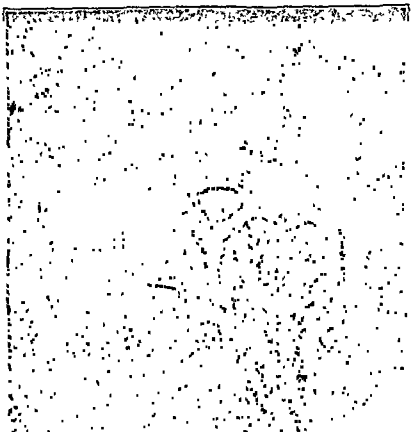
The association of adenocarcinoma with adenomyoma may be more than accidental. Beyea[6] considers that carcinoma of the uterine body may arise from adenomyoma. We are deeply indebted to Dr. Louise McIlroy of Glasgow for providing us with a section showing at one part typical adenocarcinoma with small round-cell infiltration, intraglandular inverting and extraglandular everting of closely packed distorted epithelial cells several layers thick and poor in nuclear staining, their basement membrane lost, and the interglandular stroma reduced to a minimum, and at another part

FIG. 5.



Section of a tumour showing typical adenomyomatous formation.

FIG. 6.



A different part of the same section showing adenocarcinoma.

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[5] Die Adenomyome und Cystadenome der Uterus und Tubenwandung, 1896.

[6] Hektoen's and Riesman's Pathology, 1902.

perfectly formed gland tubules composed of a single row of columnar epithelial cells and the [illegible] the basement membrane intact, the [illegible] of lymphadenoid tissue and the enveloping muscle—typical adenomyoma. Figs. 5 and 6 are reproduced from microphotographs from different parts of the same section. Fig. 6 seems to show the transition from adenomyoma to adenocarcinoma through the intermediary stage of malignant adenoma, the gland canals at that part being lined with a single row of cylindrical epithelium. We have searched several hospital and private collections of uterine tumours without coming across this condition.

To sum up, we would suggest the following as the stages of these tumour formations : first, an ingrowth of the structures of the endometrium into the muscular wall, as is seen in hypertrophic endometritis—the stage of "glandular inclusion"; second, a hyperplasia of the inclusions and a progressive infiltration stimulating a hyperplasia of the muscle—the stage of "adenomyoma benignum"; third, a loss of relations between glandular and muscular elements, the growth of the former outstripping that of the latter, inversion and eversion of the epithelium with a consequent displacement of the interglandular stroma and an encroachment on the muscle, the irritation of the growth causing the round-cell infiltration—the stage of "malignant adenoma"; and fourth, the stage of adenocarcinoma, the loss of relations between one epithelial cell and another, the riotous proliferation and heaping up of immature epithelial cells breaking through the restraining basement membrane, invading and destroying the adjacent muscle.

We have received much help from various friends in the way of specimens of uterine tumours and microscopic slides. We beg to thank Dr. Harold R. D. Spitta of St. George's Hospital for the excellent microphotographs which he has taken for us.

A Mirror
OF
HOSPITAL PRACTICE,
BRITISH AND FOREIGN.

> Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv., Prooemium.

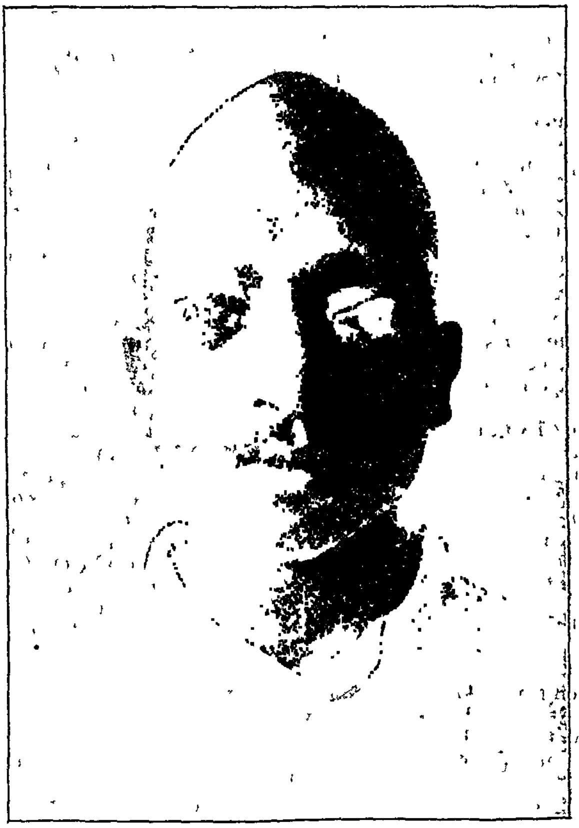
SIR JAMSETJEE JEEJHEBHOY HOSPITAL, BOMBAY.

A CASE OF OCULAR DEFECTS ASSOCIATED WITH CONGENITAL DEFORMITY OF THE CRANIUM (OXYCEPHALY).

(Under the care of Captain E. F. GORDON TUCKER, I.M.S.)

THE patient was admitted into the wards of Captain Tucker in the Sir Jamsetjee Jeejhebhoy Hospital early in September, 1903, for an attack of malarial fever which rapidly responded to treatment. The curious condition of the eyes was at once observed and examination of the cranium showed that the occipital region was very deficient and that the posterior part of the skull was almost on the same plane as the back of the neck. After his head had been shaved the "steeple-shaped" character of the cranial vault was evident. He was a Mahratta and stated that his age was about 20 years and that his eyes had always been prominent. His father was alive and in good health and had no peculiarity of the eyes or the face. His mother died about five years previously, apparently from phthisis ; there were three sisters who died young and there was one brother living who had not ocular defect or peculiarity The patient's work was to look after cattle. He answered questions intelligently; he gave no history of headaches and had always had good health. Vision for distant objects was good. He was of normal height, build, and development. The cranium showed a projection in the form of a ridge from the centre of the vertical portion of the frontal bone to the central point of the vault, which was situated one and a half inches in front of a line drawn perpendicularly upwards from the external auditory meatus. The marked bulging in the temporal regions present in the case of congenital proptosis associated with a curious formation of the cranium in a boy, aged seven years, who showed evidence of some mental deficiency, described by Mr. H. Work Dodd and Mr. W. H. McMullen in THE LANCET of June 13th, 1903, p. 1665, was not evident in this case. The shape of the face was natural. The nose was well-formed. The palate was very high and arched and met at the uppermost part in a deep sulcus. The teeth were very good and not at all crowded together. The neck was of normal shape and there was no enlargement of the thyroid gland. Coördination of muscular movement was quite natural. The measurements of the head and face were as follows: horizontal circumference, 49½ centimetres; naso-occipital arch, 34 centimetres; binauricular arch, 34 centimetres; height of the orbits, 4½ centimetres; breadth of the orbits, 5 centimetres; transverse diameter (measured with callipers), 12·2 centimetres; anteroposterior diameter, 16·2 centimetres; suboccipito-frontal, 16·2 centimetres; distance between the two external angular processes, 11·4 centimetres; and height of the frontal bone, 11·8 centimetres. The cephalic index was therefore 75·3. Certain ridges on the cranium were well marked; the superior temporal line stood out along the whole side of the skull; the superior curved line of the occipital bone could be felt and the external occipital protuberance was of the size and shape of a marble. There were no definite parietal eminences. The internal condyle of each humerus was very prominent and this enlargement was symmetrical; the internal condyle of each femur was also large and there was the slightest possible amount of genu valgum. The proptosis could be well seen in the photographs (see illustrations). Quite two-thirds of the globe were in front of the orbital margin; a little pressure on each lid caused still more proptosis and pain; there was more proptosis in the right eye than the left and it could be moved laterally by the fingers but this was painful. Vision was good; there was no nystagmus. Hearing was good. There was external strabismus on both sides but the left eye was the most affected The movement of the right eye, when acting alone, was impaired in the inward direction and slightly so in the upward direction. Similarly there was impaired movement with the left eye acting alone but the movements

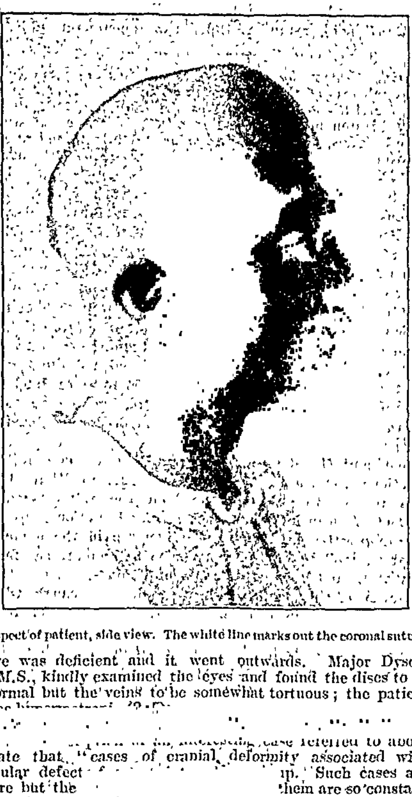
FIG. 1.



Aspect of patient, front view.

of the left eye inwards were slightly more impaired than on the other side. When both eyes acted together the left eye did not follow an object moved towards the right and when the object was to the left the right eye did not move beyond the median line. Bilateral movement of the eyes downwards was normal but on looking upwards movement of the left

FIG. 2.



Aspect of patient, side view. The white line marks out the coronal suture.

eye was deficient and it went outwards. Major Dyson, I.M.S., kindly examined the eyes and found the discs to be normal but the veins to be somewhat tortuous; the patient

interesting case referred to above state that "cases of cranial deformity associated with ocular defect ip. Such cases are rare but the them are so constant that it appe these defects are dependent on, or at any rate are closely related to, the deformity of the skull. The variety of cranial deformity most commonly found in these cases is oxycephaly." The case which is described above is an interesting example of this type of cranium and the proptosis and external strabismus give the patient a curious and noticeable physiognomy. But it differs from the case described by Mr. *Dodd and Mr. McMullen in showing no appreciable mental* defects and in slightly less cranial deformity. The cause of the early obliteration of the lambdoid suture which produced the exaggerated growth in the vertical direction is quite obscure and rickets is discarded by the authorities in the consideration of the etiology, but in this case the existence of the exostoses in the position of the external occipital protuberance and the humeral condyles and the slight genu valgum are points of interest.

POPLAR AND STEPNEY SICK ASYLUM DISTRICT.—The report of the managers of this district for the year which ended on Lady-day, 1904, shows that in the various institutions of which they have control there were 921 patients, as compared with 896 last year. The analysis of diseases shows that bronchitis, heart troubles, rheumatism, and ulcers are greatly in excess of other affections. There was one case of Hodgkin's disease in the Bromley Asylum.

Medical Societies.

BRADFORD MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on June 21st, Dr. H. Angus, the President, being in the chair.—Dr. T. M. Legge, H.M. Medical Inspector of Factories, read a paper on Sclavo's Serum Treatment of Anthrax in Man. Dr. Legge stated that his attention was first called to the work of Dr. Sclavo in a

had since received, through the kindness of Dr. Sclavo, professor of hygiene in the University of Sienna, some 60 tubes of the serum, but before venturing to bring the matter before the society and asking the members to use the serum he had endeavoured to sift the evidence on which treatment by its means was based. Evidence as to the possibility that passive immunity might be conferred on man had been obtained as the result of Sobernheim's analogous experiments *in the case of sheep.*[1] *Sobernheim found that by adopting* the method (originally acted on by Dr. Sclavo) of combined active and passive immunising treatment (simultaneous inoculation of serum and virus) he was able to produce a high degree of active immunity in sheep and that the serum of such animals contained specific protective bodies against anthrax. Supported by the Chamber of Agriculture of Saxony he had tested and proved the success of the method on 2700 cattle in anthrax infected districts. As soon as the inoculations were commenced further outbreaks of the disease ceased to arise. Already in 1895 Dr. Sclavo had been able to show (1) that sheep brought to a high degree of active immunity could furnish a serum active against anthrax, and (2) that this serum showed prophylactic and curative powers against anthrax in rabbits. In order to obtain a more powerful serum he instituted comparison of the efficacy of *the serum obtained from the sheep, the goat, the horse, the* ass, and the ox. It was from the ass that he obtained the most powerful serum and in a recent communication to him (Dr Legge) Dr. Sclavo still regarded the ass as the most suitable animal from which to obtain anti-anthrax serum. In view of the experimental results showing the curative power of the serum and its innocuousness when injected in large doses into animals Dr. Sclavo turned his attention to the treatment of external anthrax in man and the first case was treated by means of the serum in June, 1897. In a paper[2] dated 1903 Dr. Sclavo gave details as to age, occupation, situation of pustule, medical practitioner treating, verification and result of 158 out of cases, all which had been treated with the serum up to time of reporting. The fatality in these 164 cases was 6·09 per cent. as compared with 24 per cent. for the figures *published for the whole of Italy and* 26 per cent. for 211 cases of industrial anthrax reported to the chief inspector of factories in the years 1899–1903. The figures were very far, he thought, from giving an accurate idea of the therapeutic value of the serum. In several instances the treatment was not tried until all hope from every other form had been given up. Even in some of the fatal cases extraordinary improvement for a time occurred. The conclusions which Dr. Sclavo drew from his work in consideration of the results hitherto obtained were that: (1) the serum was innocuous even in large doses; (2) it could be well borne even when *introduced into the veins; (3) no case* taken in an early stage and of moderate severity would be fatal if treated with the serum; (4) by its means some cases might be saved when the condition was most critical (he narrated one case in which a woman recovered after bacilli were found both in the blood and urine and another in which they were present in the urine); (5) when injected into the veins it quickly arrested the extension of the œdematous process so as to reduce notably the danger of suffocation which was present in many cases when the pustule was situated on the face or the neck; (6) if used early enough it reduced to a minimum *destruction of the tissues when* the pustule was localised and thus diminished risk of deformity; and (7) persons attacked appeared to become convalescent almost at once. The dose of serum recommended in ordinary cases was 30 to 40 cubic centimetres subdivided into three or four injections subcutaneously into different parts of the abdomen and followed in 24 hours if there had been no improvement by further injections of from 20 to 30 cubic centimetres. In every grave case he recommended endovenous injection, preferably into one of the superficial veins on the back of the hand, of ten cubic centimetres followed in an hour or two where no improvement was shown by another similar dose.—Dr. J. H. Bell, Dr. H. J. Campbell, and Mr. W. H. Horrocks made remarks on the paper and Dr. Legge replied.—Mr. C. F. M Althorp showed specimens of Ovarian Tumours.

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[1] Zeitschrift für Hygiene, vols. xxv. and xxxi., and Berliner Klinische Wochenschrift, No. 22, 1902.

[2] Sullo Stato Presente della Sieroterapia (Anticarbonchiosa).

Reviews and Notices of Books.

Progressive Medicine. Edited by HOBART AMORY HARE, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia; Physician to the Jefferson Medical College Hospital. Vols. I. and II., 1903. London: Rebman, Limited. Vol. I., pp. 450; Vol. II., pp. 437. Price 15*s*. per volume.

AS our readers are probably aware this publication consists of a quarterly digest of advances, discoveries, and improvements in the medical and surgical sciences. Vol. I. contains six contributions. The first is by Dr. C. H. Frazier on the Surgery of the Head, Neck, and Chest. Some interesting remarks are made on operative procedures in cases in which the heart has been wounded. The results obtained from several sources clearly show that there is a larger percentage of recoveries after operation than when only palliative treatment has been adopted. The surgical treatment of pulmonary tuberculosis is also commented on, but the general trend of opinion seems to be that up to the present operative interference has not met with much success. The next article is headed Infectious Diseases, including Acute Rheumatism, Croupous Pneumonia, and Influenza, and is written by Dr. J. B. Herrick. The value of the antitoxin treatment of diphtheria is discussed. Although the vast majority of practitioners are convinced of the good results obtained by means of the antitoxin there still appear to be some sceptics who maintain that the whole question is yet unsettled. Hueppe, for instance, at a meeting of the Prague Medical Society, argued that the benefit arises from the fact that when the serum is used the physician feels that he has done his best and therefore lets the harmful local treatment alone. That this opinion does not represent that of the Prague school is shown by the vigorous defence of antitoxins by Ganghofner, Epstein, Salus, Langer, and others. Dr. F. M. Crandall writes on Diseases of Children and makes some interesting observations on the morbid conditions affecting the newly born infant and he also gives a *résumé* of the contributions which have appeared on infant feeding. The section on Pathology has been intrusted to the able hands of Dr. Ludvig Hektoen. Amongst other matters he gives a good summary of recent investigations in regard to cytotoxins, agglutinins, and precipitins. The recent advances in laryngology and rhinology are considered by Dr. A. Logan Turner, and those in otology by Dr. R. L. Randolph.

Vol. II. commences with an article on the Surgery of the Abdomen, including Hernia, by Dr. W. B. Coley, who considers that there is a strong tendency on the part of operators to combine the distinctive features of a number of operations for hernia into a single operation which, they reason, must give better results than any of the methods if carried out as originally proposed. The review of advances in gynæcology is written by Dr. J. G. Clark who gives an extensive digest of the latest papers upon all phases of cancer of the uterus. He considers that this is the one gynæcological disease which has resisted all forms of treatment and "stands as a reproach to the abdominal surgeon." His remarks upon inflammatory affections of the pelvic viscera are also worthy of note. Dr. Alfred Stengel gives an account of the work which has been accomplished in reference to diseases of the blood and ductless glands, the hæmorrhagic diseases, and metabolic diseases. Under this heading are included observations on diabetes, gout, myxœdema, exophthalmic goitre, and Addison's disease. The last contribution in this volume is on Ophthalmology by Dr. Edward Jackson. The whole publication maintains the high standard which always characterised it.

Scientific Memoirs by Officers of the Medical and Sanitary Departments of the Government of India. Second Report of the Anti-malarial Operations at Mian Mir, 1901–1903. By Lieutenant S. R. CHRISTOPHERS, M.B. Vict., I.M.S. New Series, No. 9. India: Office of Superintendent of Government Printing. 1904. Pp. 37. Price 10 annas or 1*s*.

THE author of this monograph first briefly refers to previous reports on the same subject by the Royal Society's Commissioners and by Captain S. P. James, I.M.S. The main results of the work undertaken in 1902 were found to be that the cleaning of the banks in itself did not prevent the breeding of anopheles in the watercourses and "oiling" in addition with kerosene was found necessary; that no reduction in the *anopheles Rossii* was noticeable, although the *anopheles culicifacies* was to an extent diminished; and that the fever season in the bazaar was delayed and shortened The results obtained also by Captain James in 1902–03 with reference to the destruction of anopheletes over a wide area were without effect, for in May, 1903, the anopheletes were as abundant as ever.

Lieutenant Christophers then details an account of his operations from July to November, 1903, in Mian Mir. With respect to the operations on the water-courses, the fact of cleansing their sides having been found to be quite inoperative in stopping the increase in the number of larvæ, "oiling" was had recourse to regularly, at first every week and later at intervals of 12 days. After the institution of this regular oiling nymphæ were caught with the greatest rarity in the channels so treated. It was found, however, that unless the vegetation fringing the watercourses was first removed "oiling" was rendered impracticable. In order to reduce the cost the experiment of emulsifying the oil with soap solution was tried, with the result that a more perfect film was produced and its effectiveness was almost doubled. These experiments in the laboratory did not, however, coincide with their use in the canals where the pure oil was found to be somewhat more effective. The author then proceeds to note the results obtained on miscellaneous breeding places by drainage and the filling up of pits and sheets of water around the barracks, bazaars, and bungalows within the area experimented upon. He found that in spite of these measures a good many breeding places were left which had to be searched for and removed, such as the water in small cement tanks, kerosene tins, and earthenware water-pots. These were dealt with once a week. Lieutenant Christophers, however, holds them to be of little comparative importance. The operations directed against rain-formed pools are next narrated. These consisted in superficial drainage, filling with earth, baling out, and "oiling"; on the whole, surface drainage was found to be the most effective and satisfactory of all operations.

In Part III. the results are detailed. It was found that the number of larvæ in the area experimented upon showed no tendency to diminish in spite of repeated wholesale destruction and that with reference to the diminution of the common anopheletes in Mian Mir none perceptibly occurred as regards the *anopheles Rossii*, whilst it was difficult to come to a conclusion respecting the *anopheles culicifacies*. The result of Lieutenant Christophers's experiments in regard to the effect of anti-culicidal measures against anopheletes is thus in direct variance with hitherto recorded results. With regard to the effect on malaria, he found the onset of the fever season to be postponed but that after the first two months no effect was apparent.

In Part IV. certain points in the biology of mosquitoes are detailed, such as were found in connexion with the swarming of certain species; with their flight, it being found that at Mian Mir they traversed three-quarters of a mile to reach an abundant food-supply; with the spread of adult anopheletes; with the time of pupation and hatching; and with the effect of heavy rain and of desiccation on anopheles larvæ.

In Part V. the question of treatment by quinine is dealt with. A very distinct reduction in malaria followed its administration where the latter was strict, but the author does not hold that as a routine practice it is of much value owing to the difficulties in its employment. When given to native children, however, its effect upon the prevalence of enlargement of the spleen was very distinct.

Lieutenant Christophers thus shows his conclusions to be in close accordance with those arrived at by Captain James in the first report. He holds that "gradual but permanent improvement in the health of stations by well-directed sanitary reforms, wherever these can be carried out, will in the end yield the best results."

The Prevention of Disease in Armies in the Field. By ROBERT CALDWELL, F.R.C.S. Eng., D.P.H. R.C.P.S. Edin. & Glasg., Major R.A.M.C. London: Baillière, Tindall, and Cox. Pp. 182.

WE welcome this excellent work. There are not many such books on this important subject nor are there many characterised by the conveyance of so much valuable matter in so brief and portable a compass as has been contrived by the author. It embraces the outcome of his experience in Egypt and South Africa. Enteric fever is first treated. Major Caldwell's earliest experience of this disease in an epidemic form was at Korosko in 1885 and 1886. He had previously left this camp in July, 1885, with a clean bill of health as regards enteric fever but on his return there in the succeeding winter he found that the disease had developed during the winter months to a most serious extent. To account for the epidemic the author concludes that the bacillus typhosus arose by transformation of the colon bacillus which then found a suitable medium in the basic nitrates and residue of unreduced organic matter in the sandy soil and was subsequently disseminated by means of dust and of flies. No enteric fever was found previously in the neighbouring villages of the fellaheen nor would it appear to have been water-borne. Again, in regard to South Africa Major Caldwell, who served in the Ladysmith relief column, holds that the enteric fever therein arising was due to the polluted soil surroundings, the enteric bacillus being swallowed with the dust, the food, or the water.

With regard to dysentery the author points out that although this disease may not appear so promptly as enteric fever consequent on pollution of the soil, yet when once it has appeared it will persist much longer. He holds that the essential cause owes its origin to some pre-existing organism in the alimentary canal and that then after attacking its own host it is voided in the fæces, from which the next victim is attacked. He also draws attention to the probably acquired infection developed from primary diarrhœa, an observation fully according with the experience gained in Afghanistan in 1878-80. The various conditions associated with diarrhœa are next detailed, as to its origin from food, water, dyspepsia, chill, and a probable specific organism. The facts relating to various other diseases—e.g., simple continued fever, dyspepsia, contagious ophthalmia, pneumonia, dengue, and malaria—conclude this portion of the work.

Administrative matters affecting the health of troops in the field form the next subject for discussion. The bell tent is deservedly condemned; there is no ventilation worthy of the name and when the "flies" are down and the door is laced up the interior, as the author remarks, suggests that of a fœtid oven. It is also a most inefficient protector against heat or cold and by excluding the sunlight the bactericidal powers of the sun are lost. The author draws attention also to the spread of infection by blankets, by clothing, and by stretchers; with regard to the last-named an admirable adjustable waterproof cover, invented by him to prevent such contamination, is figured. The danger of aerated waters owing to previous defilement in some way or other of the bottles is pointed out and the objection to prolonged occupation of the same camping grounds is also alluded to.

The author next treats of sanitary measures in the field; he shows how important a matter is the inspection of men as to their fitness to serve at the front. At the outbreak of war it is natural that our countrymen should be anxious to serve and so during the Boer war the reservists constantly concealed the existence of ailments from the eyes of the civilian practitioners and were thus passed although hopelessly unfit for the fatigues of a campaign. The necessity of avoiding camping grounds in localities swarming with flies is insisted on. Next follow considerations how to guard against soil pollution in connexion with tents, latrines, and camp refuse, and in regard to this part of the subject it may be mentioned that the author has himself devised a very efficient camp and refuse destructor. In the disposal of the excreta of patients in field hospitals it must be remembered, as the author states, that it is necessary to sterilise the excreta of enteric fever patients beforehand. Firth and Horrocks have shown that the enteric bacillus can survive 74 days in moist soil. This, however, must always be a source of difficulty in a mobile camp. Hence all serious cases of illness must be at once removed from the fighting line. In his field hospital the author ordered all vessels for the reception of the excreta to contain a 10 per cent. solution of carbolic acid. He, however, expresses the doubt whether the germicidal fluid ever came into sufficiently intimate contact with these excreta. As it is laid down that the germicide should be intimately mixed with the excreta for an hour before burial by the authorities we certainly share his doubt.

The book deals with many other subjects on which limits of space forbid us to dilate, such as diet, marches, clothing, medical inspection, and the prevention of malaria and parasitic diseases. In conclusion, we congratulate the author on the production of a work which every officer of the Royal Army Medical Corps should possess.

Tuberculosis. By NORMAN BRIDGE, A.M., M.D., Emeritus Professor of Medicine in Rush Medical College. London, Philadelphia, and New York: W. B. Saunders and Co. 1903. Pp. 302. Price 6s.

THE substance of the lectures on "Medical Tuberculosis" delivered by the author in Rush Medical College during the past three years is embodied in this work. The book is divided into 18 chapters and a fairly satisfactory account is given of pulmonary and laryngeal tuberculosis. Dr. Bridge is more successful in the clinical description than when considering the etiology and pathology of the disease. Some of his statements can scarcely be taken as accurate. For instance, in speaking of the bacillus tuberculosis he says: "In different atmospheres the number of organisms inhaled by an adult person varies from probably half a dozen to several hundred every minute of life." Man is probably naturally immune to tuberculosis but the resistance of the human species would have to be very strong to overcome such [illegible] are [illegible]

Again, we cannot agree with the following statement and explanation: "A patient will often make a sudden slight improvement after a moderate hæmorrhage. We were at a loss to understand why this was so until it was discovered that the blood outside the vessels has a power more destructive to microbes than that inside. ...... It is true that it [the blood] also washes away some of the products of the disease and helps to get them out of the body, which is useful so far as it goes." The author's views, too, on the formation of fibrous tissue in a tuberculous lung are also rather vague. "It is my belief that fibrosis is incited to some degree by the motion of the lung: the greater the motion and violence from the respiration the greater the fibrosis; the more quiet the lung, the less of this process." The chapters on the Symptoms, Physical Signs, and Diagnosis of Tuberculosis are, on the other hand, well worthy of study. They exhibit a thorough knowledge of the disease from a clinical standpoint and many hints are given which will be found of value in actual practice. Dr. Bridge constantly associates the physical signs with pathological conditions, which is the correct way of obtaining a true picture of the course of the disease. His remarks on treatment are also interesting and his directions as to diet may be followed with advantage. He lays due stress on the prophylaxis of tuberculosis and he points out the educational advantages of sanatoriums in teaching patients affected with the disease how they can to a great extent prevent the spread of the malady.

Lectures on Clinical Psychiatry. By Dr. EMIL KRAEPELIN, Professor of Psychiatry in the University of Munich. Authorised translation from the German, revised and edited by THOMAS JOHNSTONE, M.D. Edin., M.R.C.P. Lond. London: Baillière, Tindall, and Cox. 1904. Pp. viii.—308. Price 10*s.* 6*d.* net.

NO apology is needed for the reproduction in English of any part of Professor Kraepelin's works on psychiatry. His classical "Lehrbuch der Psychiatrie," which embodies the soundest and most advanced knowledge of the day in psychological medicine and of which a new German edition in two volumes has just been issued (1904), constitutes the high-water mark of science in this direction and must be regarded as indispensable for all alienists and students of mental disease. The present volume of clinical lectures is different in that it consists of a series of lessons mainly clinical and descriptive of the various types of insanity, eminently practical in character. and taking but little account of metaphysics and anatomical pathology. The introductory lecture on melancholia is followed by others in which the maniacal-depressive insanities and adolescent insanity are discussed. Then follow other lectures dealing with states of depression in general paralysis, epileptic insanity, maniacal excitement, katatonic insanity, the megalomania of general paralysis, and alcoholic insanity. Next, by a natural transition, the toxic group of insanities is taken up and the insanities which follow acute (infectious) diseases, the varieties of mental delirium, and puerperal insanity are described at some length. The fifteenth and sixteenth lectures deal with the predominantly delusional forms of insanity of the young—paranoia and paranoid dementia præcox—which at the present day are attracting much attention, and many interesting facts and data are brought together in these chapters with regard to these affections. The concluding half of the book is occupied with such subjects as the different forms of insane delusions, chronic alcoholic insanity, morphinism and cocainism, the final stages of general paralysis and of dementia præcox, imbecility from coarse cerebral lesions, epileptic imbecility, senile insanity, traumatic insanity (following head injuries), idiocy, imbecility and cretinism, and the psychoses which lie on the borderland of insanity—hysteria major. the insanity of obsessions and morbid impulses, and criminal and other morbid (including sexual) perversions of personality. In the course of 29 lectures Professor Kraepelin has given us within the compass of a moderately sized volume a series of instructive studies and clinical pictures of the various forms of insanity which for interest, information, philosophic insight, masterly grasp of the subject, and clearness of exposition will rank with the famous lectures of Charcot and will probably long remain unsurpassed in psychiatric medicine.

Intestinal Parasites as Factors in the Mortality of Prisoners in Cannanore and Rajahmundry Jails. By C. F. FEARNSIDE, M.A., M.B. Aberd., Major I.M.S. Reprinted from the *Indian Medical Gazette*, vol. xxxix. (No. 4, April, 1904). Pp. 35, with clinical chart.

THE object of this pamphlet is to draw attention to the prevalence of the ascaris lumbricoides on the west coast of India as shown by experience in the Cannanore Jail. The health of the prisoners there has been unsatisfactory for many years; the total death-rate has been uniformly high and that from bowel affections has generally been considerable. Only during the last three years included in the series of observations has there been a steady reduction in the mortality generally and especially in that due to bowel complaints. The reduction is believed to be due to the recognition of the fact that the ascaris lumbricoidet is excessively prevalent in this part of India and thas to its presence may be traced many of the diseases which have caused mortality in previous years. A post-mortem examination on a case of diarrhœa with anæmia and dropsy revealed 37 worms at the ileo-cæcal valve and it occurred to the author that they were the cause of the intractable character of the case. Acting on this idea regular resort was had to anthelmintics in the treatment both of prisoners and of prison subordinates, with the result that the number of cases of dysentery was reduced from 144 in 1892 to 10 in 1896, the number of cases of muco-enteritis from 77 in 1892 to nine in 1896, and that of diarrhœa from 79 to one. The prevalence of the parasite on the west coast is doubtless due to the damp climate of Malabar. Other worms which are very common on the coast are filaria sanguinis hominis, oxyuris vermicularis, tricohcephalus dispar, and the ankylostoma duodenale. Man is not the only host in this district infested with these parasites; in the crow and other birds tapeworms and ascarides are very common. Major Fearnside draws attention to the great importance of the presence of the ankylostomata in malarial or other cachexias. He says that they bleed patients who can ill afford to lose the blood and set up local congestions and erosions of the bowel which cause a catarrh and thus retard the proper assimilation of the food and recovery. It is this secondary effect of the presence of the ankylostoma that he looks upon as most injurious. The pamphlet is an interesting one; but why has Major Fearnside not published his observations earlier? The death-rates of the Cannamore Jail are quoted from 1881 to 1896.

THE CREMATION SOCIETY OF ENGLAND.—No. XVII. of the Transactions of this society has just been published and naturally contains a reference to the death of the late Sir Henry Thompson, Bart., one of the founders of the society and its president from its inception 30 years ago. During the year 1903 143 cremations took place at Woking, a number considerably less than in previous years, but it should be noted that the Golder's Green crematorium commenced operations at the close of the year 1902 and was, therefore, in competition with the Woking crematorium during the year 1903. The total number of cremations which have taken place at Woking to the end of 1903 is 2515. Notwithstanding the decrease in the number of cremations carried out at Woking during the past year the receipts were slightly more than the expenses of the society.

THE LANCET.

LONDON: SATURDAY, JULY 9, 1904.

What Constitutes Live Birth?

AMONG the most important cases in which medical evidence is put forward in courts of law are those where the issue depends upon the answer to the question, "Was the child born alive or not?" This importance may arise in the case of the mother of a dead child who is being tried upon the capital charge owing to her having been alone when the child was born and from medical evidence being consequently the only evidence obtainable as to the fact of life; in civil cases it may be due to there being rights to property depending upon the result. In the cases which arise in the civil courts and which are of far less common occurrence than the criminal trials there are more frequently witnesses as to the details of the birth other than medical men, but these are likely to be under the influence of sympathy with one side or the other, so that the weight of impartiality is added to the scientific value of the medical evidence. In these circumstances it is a matter for some regret that neither the legislature nor the judicial bench has ever laid down an authoritative definition of live birth for the purpose of legal proceedings. The recently constituted Central Midwives Board in framing rules for the guidance of midwives in cases of stillbirth had to supply them with a definition collated from the summing-up of various judges. There was no other course open to them. Yet the question is one of no less importance than that of mental responsibility which the House of Lords discussed in M'NAUGHTON'S case and upon which they called together the judges to advise them. For the guidance of midwives who are to notify stillbirths to the local supervising authority the Central Midwives Board has laid down that "a child is deemed to be stillborn when it has not breathed or shown any sign of life after being completely born," and as the board's rules have been approved by the Privy Council this may be said to be an authorised, if not a legal, definition of stillbirth as opposed to live birth.

Dr. STANLEY B. ATKINSON, a medical man who has been called to the bar, contributed an exhaustive article entitled "Life, Birth, and Live Birth" to the April number of the *Law Quarterly* which has been reprinted in the form of a pamphlet. This article contains a variety of dicta from the summings-up of judges in cases where questions of birth have been discussed from various points of view and the diverse opinions thus collected for comparison show how difficult it is to arrive at a just conclusion in such a matter. An important part of the task set is to draw a line at some point in the often protracted period of parturition the crossing of which must be accomplished before the new human being can be deemed to have entered the world. Until he has crossed that line he is neither to possess property nor to have a life the wilful taking away of which can be charged as murder, and yet before he has crossed it, wherever it is fixed, he will still have been physiologically alive and his life will have been such that he could have been deprived of it by the act of others. With regard to this vexed question as to when the life of a human being, as such, is to be deemed to begin it will be seen from the numerous cases cited by Dr. ATKINSON that judges, whatever they may hold to be the law, do not always approve the view that "complete birth" is necessary in order to constitute a live child. "Complete birth" implies that the child is entirely external to the mother but it is not necessary to "complete birth" that the placenta should have come away or that the umbilical cord should have been severed. Fortunately, the women who after giving birth to children conceal or destroy them do not study the law and are usually not in a condition deliberately to evade it, otherwise dangerous results might follow from their realising that the killing of the child when still partly in the mother's body could not be charged as murder. That this, however, would be in consonance with the accepted view of the law is well known. Professor MEYMOTT TIDY, among scientific writers, called attention to it in his work on "Legal Medicine," citing a case occurring in 1841 in which an accused person, who had cut off the head of a child that was in process of being born, was acquitted of murder. Among the cases cited by Dr. ATKINSON in which judges have expressed doubt or disapproval as to such a theory of separate existence is one in which Mr. Justice WILLS, a judge of great experience, characterised it as "very unsatisfactory" and as "enabling women to escape punishment on account of a pure technicality which is contrary to medical knowledge on this point." Mr. Justice WRIGHT on another occasion seems to have told a jury that "the true test of separate existence in the theory of the law, whatever it may be in medical science, is the answer to the question whether the child was carrying on its being without the help of the mother's circulation. If 'Yes,' then it had a separate existence even though it might not be fully born. If 'No,' it had no such separate legal existence" In that case the jury acquitted the prisoner, so that no question could be raised as to whether the definition formulated for their guidance was to be regarded as of universal acceptance or not.

It is not, however, only the moment at which life as a human being begins which is not satisfactorily defined, but the "signs of life," the presence or absence of which are to be taken as proof of its existence, require definition also. With regard to this Dr ATKINSON observes: "Many judicial statements may be cited as to the nature of the test of the consummation of live birth. Repeatedly is the proof of either 'existence' or 'circulation' insisted upon, seldom is that condition defined, even parenthetically." It is a matter of some importance for medical men that they should know in studying medical jurisprudence or in qualifying to give evidence in a case in which their testimony is required where the line between existence and non-existence as a human being is to be drawn. It is also of importance for them that they should know what faint traces of the performance of functions associated with life are to be deemed proof that "life" was once present. It may be observed that trials of the kind indicated must always present great difficulties of fact to judges and still more to juries, whatever advantage may be derived from a clear statement of the law. They are cases in which, of all others, the presence of the medical assessor would be of advantage to the judge and the 12 men whose combined opinion now decides so many weighty and abstruse questions.

The Fairs at Wigan.

The ancient borough of Wigan, in Lancashire, is apparently to be congratulated on the possession of an institution, or organisation, or whatever it may most appropriately be called, which might with great advantage be introduced into many other localities. Its official style is "The Wigan and District Ratepayers' Emergency Association" and its business seems to be mainly that of subjecting the municipal authorities to the steady pressure of local public opinion in order at once to encourage them in well-doing and to restrain them from undertakings not likely to be beneficial to their constituents. A recent example of the useful activity of the association has been furnished by a letter which it has addressed to the mayor of Wigan, embodying a resolution to the effect that there is no longer any need for the Wigan fairs which have hitherto been held twice annually, in May and in October, and declaring that these fairs, in the opinion alike of the association and of the majority of the townspeople and ratepayers, are detrimental to the best interests of the town and to the health of the inhabitants. It is pointed out that since its inclusion in the list of "large towns," the death-rates of which are tabulated weekly and published by the Registrar-General, Wigan has gained an unenviable notoriety by reason of its high mortality and the association considers the fairs to be very objectionable on sanitary grounds, to say nothing of the question from the standpoint of public morality. The association therefore expresses its hope that the mayor and council of the borough will see their way to terminate the evils complained of by abolishing the fairs and by thus putting an end to the disorders which they occasion. The power of actual abolition is, we believe, vested only in the Home Secretary, but there can be no doubt that this power would at once be exercised if sufficient ground were shown by the local authorities.

It is, of course, more than probable that the representations thus made by the association are entirely justified by the facts of the case, inasmuch as fairs which have survived the circumstances first calling for their establishment have always displayed a tendency to degenerate into nuisances of a very grave description. As originally founded, they were of great public convenience by collecting together, at times when roads were bad and when travelling was difficult or dangerous, large numbers of the buyers and sellers of various commodities and, still more frequently, by affording facilities for the wide distribution of the products of local industries. Even in quite recent times, for example, the once famous "Goose Fair" of Nottingham was a very important mart for cheeses of the Stilton type, which were thence carried into all the northern parts of the kingdom, and other great fairs have fulfilled similar purposes with regard to other commodities. At one time the supply of Scottish cattle to the south was largely dependent upon the drovers and dealers who went in large numbers to the great fair at St. Faith's, near Norwich; Weyhill fair was the great centre of the south of England sheep trade; the fairs of Horncastle, of Howden, and of Woolbridge were the places at which young horses chiefly passed out of the hands of the breeders; and nearly all the Irish cattle destined for export changed hands at Ballinasloe. Fairs of this kind, with special objects of their own, survived most of those which were of merely local reputation, which had never fulfilled any more important purpose than that of the periodical gathering together of general commodities for the convenience of the inhabitants of the district, and which were deprived of their sole *raison d'être* by the uprising of numerous market towns, by the extension and improvement of roads, canals, and railways, and by the development of the general postal and commercial systems of the kingdom. The origins of the local fairs thus rendered superfluous were, in many cases, lost in the mists of remote antiquity; many, however, if not most of them, had been seized upon in feudal or mediæval times as a means by which profitable privileges could be conferred upon some individual, community, or corporation, to whom or to which certain tolls became thenceforward payable. Towns which had suffered during war were sometimes thus rewarded if the side which they had espoused were victorious, an example being the privilege of holding a free fair which was granted by Edward III. to the town of Burnley. Other fairs were held under the control of religious bodies and frequently became monopolies of the most rigorous and oppressive character. London shops were compulsorily closed during the days on which the Abbot of Westminster's fair was open, and the Bishop of Winchester was entitled to forbid the transaction of ordinary business in Winchester and in Southampton during the continuance of St. Giles's fair—a period which was extended from three days to 16 by a charter granted by Henry III. It is fairly certain that powers of this kind committed to ecclesiastics would not be permitted to rust or to languish from disuse, and that fairs supported by such privileges must have entailed serious loss upon all the established or stationary traders in their vicinity.

The fair of greatest interest to the medical profession is undoubtedly the once famous Bartholomew's or "Bartlemy" fair, which, like St. Bartholomew's Hospital, was founded in Smithfield in 1133 by Rahere, a monk who was described by Stow as "a pleasant witted gentleman" and who filled the not very monastic office of minstrel and jester to Henry I. According to an account in the Cotton MSS., Rahere "ofte hawnted the kyng's palice, and amo'ge the noyseful presse of that tumultuous courte, enforsed hymselfe with jolite and carnal suavite: ther yn spectaclis, yn metys, yn playes, and other courtely mokkys, and trifyllis intrudyng, he lede forth the besynesse of alle the day." Rahere founded a monastery of which he was the original prior and concerning which there is a curious record of a free fight between the sub-prior and canons, on the one hand, and Boniface, Archbishop of Canterbury, and his followers on the other, with reference to the Archbishop's claim to act as visitor. To this monastery, according to STOW, HENRY II. granted the privilege of a "faire to be kepté yeerly at Bartholomew-tide for three daies, to wit, the eve, the day, and the next morrow"; but, in course of time, the period became extended to as much as 14 days. In 1614, on account of the filthy state into which the soft ground was trampled by the great concourse of people, the City authorities spent £1600 in paving Smithfield; in spite of this improvement, NED WARD, in 1669, describes the fair as "ancle deep in filth and nastiness." The moral filth seems at least to have kept pace with the physical for, in 1703, at the close of a good deal of description in which agricultural implements are called by their shortest names, we read that "this is not an ark, like NOAH'S, which received the clean and unclean; only the unclean beasts enter this ark, and such as have the Devil's livery on their backs." By that time the fair had become an intolerable nuisance and many endeavours were made by the Lord Mayor and Aldermen first to shorten its duration and then to abolish it, but these were not entirely successful until 1855 when it came to its end. It was at one time the chief cloth fair of the kingdom but its period of usefulness covered only the first two or three centuries of its existence. Its history is analogous to that of all similar institutions, and the preamble of the Act 34 Vict. c. 12, by which fairs are now controlled, declared that many of those then existing were "both unnecessary and productive of grievous immorality." We trust that the representations of the Wigan Association may be favourably received alike by the borough authorities and by the Home Office.

The Literature of Scientific Papers.

WE received recently from the publishers an admirable little book by Professor T. CLIFFORD ALLBUTT, Regius Professor of Physic in the University of Cambridge, dealing with the literary composition of scientific papers,[1] and having read it carefully we wish that it could be made compulsory upon every member of the medical profession to do the same. In his preface Professor ALLBUTT points out that his book consists only of comments on the more frequent or more eminent defects of scientific essays, his experience being obtained by perusal, as a matter of duty, of some ninety or hundred theses, presented in the course of every year by candidates at the University of Cambridge for the degrees of Bachelor or Doctor of Medicine. He further states that his notes upon these defects are of an unsystematic and occasional character. The notes must be admitted, we suppose, to be of this casual sort, "for he himself has said it," but we should not have so described them; at any rate, despite the limitations indicated by the title of the book and by the author's verecundity, we have from his pen an excellent and suggestive tract upon the whole art of literary composition as applied to our language. We, like Professor ALLBUTT, have to peruse as a matter of duty a large number of scientific essays and we find that he has summarised, and well-nigh with completeness, within the compass of his 150 pages, the various faults of style, arrangement, and presentation that are most commonly to be found in the writings of medical authors. But he has done more than this. As a matter of fact, these same faults are to be discovered in the writings of all technical authors of the present day, whether their special engagement be in medicine, in law, in physics, or even in history. It is a notable fact that the scientific workers in all these departments of life, whose labour is and must be conducted with exactness, who deal with measurements of the smallest diameters and dates of the utmost precision, and whose whole working practice is a protest against inaccuracy, are as a class singularly inaccurate writers. Their dates and their measurements will stand scrutiny, but not the words in which they bring their facts to public knowledge. They know what they mean to say, but often they do not say it. At other times they say it, but in such an ambiguous and involved manner that the value of their teaching is discounted heavily. What Professor ALLBUTT has found in his experience of theses at the University of Cambridge, what we have found at the offices of THE LANCET, is illustrated in every technical paper in the United Kingdom, and it does not seem to us that other nations are ahead of us. Elaborate scientific papers reach us daily which have been printed in the reports of various societies and the archives of various learned bodies; the majority of them are marred by the failings that are prevalent in the theses of the Cambridge candidates.

Professor ALLBUTT'S book contains two sections, an introductory chapter which deals rather with the usual procedures of the writers of academic essays and a second chapter which is an essay on the art of literary composition, the teaching being here mainly in the nature of counsel as to the things to be avoided. In the first chapter he introduces us to his own methods of composition, rightly pointing out that every writer must have his personal plan of work. Professor ALLBUTT'S plan is not given by him as an example of one that it would suit all to follow but we are sure that the glimpse afforded into what we may call his "desk manners" will be valuable to most of our readers. It will bring home the fact, so well known to a few who have learned it by experience and apparently so little known to the scientific world, that something beyond a mass of information and a desire to publish the same goes to the making of a good book or a good essay. In the second chapter Professor ALLBUTT alludes to most of the pitfalls that lie in the path of those who fare forth into English composition without proper equipment, whose general culture supplies them with no proper standards of comparison, whose vocabulary is scanty, whose ear is ill-trained, and whose taste is faulty. Here we find pointed out the errors of those unhappy people who use fine language when uninspired by fine thought, who employ words of obvious derivative meaning in contradiction to that meaning, who lose themselves in the mazes of their metaphors, who cannot appreciate that force and clearness are lent to a sentence by the arrangement of the words, that sentence—who, in fact, shovel on to paper in the first phraseology that occurs to them all that they have to say, and, knowing their own intentions, are bewildered to find themselves misunderstood. Professor ALLBUTT does not draw his examples, either those he would have us imitate or those he would have us avoid, from medical literature, but has made his teaching far pleasanter and more entertaining by going to general literature for them. But as medical journalists we thank him for inculcating two lessons:—(1) that the rules of English prose, the methods of English style, and the graces of literary art can be as well employed upon a scientific theme as upon a romantic one; and (2) that without attention to the methods of writing and the arrangement of material a scientific work, however solid the attainments of its author, must lose much of its value. Professor ALLBUTT makes it apparent that to write well is not with many people an instinctive performance but rather the result of considerable industry, training, and application. ROBERT LOUIS STEVENSON, whose literary style, as displayed in popular romance and whimsical tales of adventure, brought home to the English public more than any modern writer has done the possibilities of our own tongue, described himself in an autobiographical note as "a sedulous ape," meaning that with the greatest industry he had imitated the style of all those of his predecessors whom he admired before he evolved a style of his own. It is a similar spirit of industry that Professor ALLBUTT would suggest as worthy of their consideration to the writers of scientific papers. We all know that style is nothing without matter, that arrangement is idle without facts—that, in short, it is essential for a man to have something to say before he considers how to say it—but when a scientific author has a message to deliver he should consider more carefully than he does at present the form in which he will deliver it. Pains expended in this way will gain for him a hearing from many ears that hitherto have been deaf.

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[1] Notes on the [illegible] of Scientific Papers. By T. Clifford [illegible], F.R.C.P., F.R.S., F.L.S., F.S.A., [illegible] University of Cambridge. Price 3s. [illegible] London.

It is disconcerting for those of us who say, and think, that the general level of culture in the medical profession is rising, to find Professor ALLBUTT'S criticism of the literary capacity of medical men founded entirely upon the perusal of theses submitted by graduates in medicine, who are generally graduates in arts, of one of the older universities. The difference between the education of the university graduate and that of the diplomate of a corporation is supposed to be that the former has obtained, and profited by, his larger opportunities for general culture. It is allowed that in many instances in the British scheme of medical education the graduate is in no sense the scientific superior of the diplomate. Is he superior in general culture? Our experience is a large one and we know that we are right when we say that as a rule the graduates of the older universities display the advantages of a broader range of knowledge and a better preliminary grounding. If at the University of Cambridge these advantages have not led to any first-hand acquaintance with literary methods it is certain that no other young medical men or young scientific men, taken as a whole class, have higher literary capacities. Most of the candidates for the degrees of Bachelor of Medicine and Doctor of Medicine at the University of Cambridge will read Professor ALLBUTT'S book and profit by it, and thus will remove from their University what seems to us to constitute a reproach. But we heartily recommend the book to all our readers. Professor ALLBUTT is an acknowledged master of elegant, precise, and good English. Apart from their scientific value his writings have claims to be considered models of prose, so that he has that best of all positions from which to be heard when he speaks of literary methods and literary style—he has employed them both with distinguished success.

Annotations.

"Ne quid nimis."

THE MEDICAL DIPLOMATES' SOCIETY OF LONDON.

THE Medical Diplomates' Society of London has been established for the purpose of meeting the natural desire of its members to obtain admission to a "final examination in *medicine*" which shall entitle them to a medical degree and shall thus remove the "serious disabilities" under which they labour by not possessing the title of "Dr." although their work is of a standard which would elsewhere than in London obtain for them a medical degree. We have received from the new society a copy of its rules and also a circular addressed *urbi et orbi*, asking for the "advice and support" of those into whose hands it falls and signed by the president of the society, Dr. F. J. Smith, of the London Hospital. By the rules of the society the qualification for membership is the possession of any diploma conferred either by the Royal College of Physicians of London or the Royal College of Surgeons of England; and there may be honorary members, not necessarily qualified as above, but of "recognised position and distinction in the medical profession." The declared object of the society is to promote the "professional advancement" of its ordinary members "by holding meetings, by providing opportunities for social intercourse, by such other means as the executive committee may approve from time to time, and by endeavours to obtain admission to an examination for a degree in medicine conferred by a British University." The language of the rule, it will be observed, differs from that of the circular, which sets forth that the contemplated examination is to be a "final" one in "*medicine*" only. The society, in short, represents the desire, the natural desire, of a certain number of "diplomates" to become entitled to call themselves "Dr." or "M.D." and to be affiliated to a "British University." We do not believe there is the least prospect that any British university will consent to give its degrees in medicine on any different basis of general attainment than is required for degrees in any other faculty. The position of the medical student in London is a peculiar one and its anomalies are now attracting much attention. He has the finest opportunities in the world for obtaining clinical instruction. He has so many chances of receiving adequate scientific education that embarrassment is produced by the duplication and reduplication of lecturers and laboratories. And yet it is exceedingly difficult for him to obtain the title of "Dr." which among the public is regarded as the hall-mark of a medical man. The Medical Diplomates' Society of London may assist in the cause of reform and so benefit succeeding generations of London students. But with regret we have to record our impression *that the action of the members must be regarded as altruistic.* We do not think it possible that they will obtain for themselves the title of "Dr." from any British university though their professional attainments are known to warrant their ready acceptance as *alumni*.

THE NATIONAL LEAGUE FOR PHYSICAL EDUCATION.

A CORRESPONDENT has sent to us a copy of *Sandow's Magazine* for July, directing our attention especially to a paragraph under the heading "National Physical Education. Doings of the Month. Edited by M.D.," in which the writer says: "I have had several letters from various parts of the country asking various questions on the subject of national physical education, which will receive attention in another part of the magazine, but one from Mr. S. O. Oliver, of Newcastle-on-Tyne, would, I think, be better dealt with here. Mr. Oliver suggests that it would stimulate both pupils and teachers alike in their physical welfare if a national league of physical education was formed. The idea seems to be a good one and I thank my correspondent for the suggestion, to which I am giving my closest consideration, and I hope in our next issue to be able to place a rough draft of some such scheme before my readers." Certainly "M.D." and Mr. Oliver would appear to be by no means up to date and not to have watched the course of events. In THE LANCET of July 18th, 1903, a letter under the heading "A National League for Physical Education" was published from Sir Lauder Brunton, suggesting the foundation of such an association and shortly afterwards a dinner was given by a well-known host at the Athenæum Club to a representative company of guests, including the Bishop of Ripon, Lord Grey, Sir Henry Craik, Sir Frederick Maurice, and several members of the medical profession especially interested in the matter. The proceedings at this dinner were referred to in our own columns on July 25th and also at greater length in the *Manchester Guardian* on July 23rd, 1903, which also printed a sketch of a draft scheme. This scheme, as our readers are well aware, is now being developed and has received the adhesion of many of the most important leaders of the clergy, law, medicine, education, and science, as well as of a good many Members of Parliament and others. We are, of course, not aware whether "M.D." is a member of the profession but we are sorry to see the names of two medical men given at length as writers of articles in a magazine which admits the advertisements of quacks to its columns. Mr. Sandow, who in some ways has done good service to the cause of physical education, is ill-advised in not exercising a closer supervision over the contents of his *Magazine*.

THE ORBITAL MUSCLE.

A CAREFUL description of the musculus orbitalis in man and many mammals is given by F. Groyer in the Vienna *Sitzungsberichte der Kaiserlichen Akademie der Wissenschaften* (Band cxii., 1903, Abtheilung iii., p. 51). The credit of being the first to recognise the presence of this muscle in man, though its existence had long been known in animals, and to establish its muscular character belongs to H. Müller. Previously to his researches it was uncertain whether it was of a fibrous, an elastic, or a muscular structure and hence it was merely termed the "membrana orbitalis." Gurlt, indeed, before Muller at one time described it as a muscle but subsequently withdrew this statement and regarded it as an elastic structure. Differences have also existed as to its extent and its action, some, like Eckbard, maintaining that it contributes to the movements of the lids as well as acting on the globe. Harling, again, considers it to be only a part of the periosteum of the orbit. The results of Groyer's own observations he thus sums up. The musculus orbitalis consists in all mammals of unstriated muscle and its size is inversely proportional to that of the osseous walls of the orbit, completing the wall of the orbit where the bone is deficient. It is continuous with the periosteum of the orbit. The muscular fibres may be disposed in one or two lamellæ. The musculus palpebralis consists of either striated or unstriated muscle; in aquatic mammals it is composed of striated muscle, in terrestrial mammals of unstriated muscle, and in the latter classes it appears to play an important part in the propulsion of the tears. The transversely striated palpebral muscle arises in common with the recti muscles, a part accompanying each rectus and being attached to the sclerotic and a part entering the lid. The palpebral portion of the orbital muscle which is connected with the inferior, internal, and external recti is composed exclusively of unstriated muscle but that portion connected with the superior rectus forms a special muscle, the levator palpebræ superioris, the posterior part containing striated fibres, the anterior splitting into two lamellæ one of which forms a tendon and the other a layer of smooth muscle and forming the musculus palpebralis superioris. The unstriated musculus palpebralis arises both from the recti and from the levator palpebræ superioris by elastic fibres. In aquatic mammals the levator palpebræ superioris is identical with that portion of the musculus palpebralis which arises from the rectus superior. The musculus orbitalis and that portion of the musculus palpebralis which is composed of unstriated muscle are united posteriorly by an elastic membrane which represents the second origin of the musculus palpebralis. Muscular fibres extend to the nictitating membrane from each of those segments of the musculus palpebralis which arise from the internal and inferior recti. These fibres may be associated with fasciculi from the musculus levator palpebræ. The muscular fibres passing to the membrana nictitans are transversely striated in all aquatic mammals but completely unstriated in all terrestrial mammals. The nerve-supply of the musculus orbitalis is the same in all mammals, both aquatic and terrestrial, and proceeds invariably from the sympathetic. The musculus palpebralis when consisting of striated muscle is innervated by the same nerve as that distributed to the corresponding rectus but when it is composed of unstriated muscle it is supplied by the sympathetic.

A RECENT ANALYSIS OF THE STRAWBERRY.

THE strawberry is a great favourite and the present season has produced an enormous quantity of excellent sound fruit. The question of the dietetic value of the strawberry is frequently discussed and we are inclined to disagree with the very commonly asserted opinion that the strawberry should be forbidden to sufferers from gout seeing that its richness in certain salts tends to render the blood alkaline and to lower the acidity of the excretions. According to analysis which we have recently made the average composition of the 1904 strawberry is as follows:—

Water	89·500	per cent.
Soluble salts (including free acid)	1·146	,,
Lime and iron salts	0·137	,,
Proteid	0·800	,,
Sugar	5·800	,,
Oily matter	0·154	,,
Cellulose and seeds	2·463	,,

Next to water the chief constituents are free acid (with acid salts), sugar, and fibre. The total acidity calculated as tartaric acid amounted to 0·822 per cent. A strawberry contains a greater proportion of water than does milk, which on the face of it may seem odd since the strawberry appears to be solid as compared with milk. As to nutritive value the strawberry can count *for little unless we regard* the sugar, which amounts to one-half the total solid matter, as valuable in this respect. This sugar, it may be remarked, however, is fruit sugar or lævulose which is more easily assimilated by patients suffering from diabetes than are other sugars, so that strawberries on this account are frequently allowed to sufferers from mild types of that disease without any harm ensuing. On the whole, however, the strawberry is consumed rather for the sake of its moisture, sweetness, and flavour than for any value that it may possess as a food, and according to analysis this value is small. The salts are doubtless slightly laxative, while the indigestible seeds and the fibre, when consumed in large quantities, are calculated to increase peristalsis and thus to be serviceable in sluggish action of the bowels. The mineral salts of the strawberry contain quite a large proportion of potassium, phosphoric acid, and iron, so that the view that an abundant diet of strawberries may have the effect of a tonic is not without some reasonable basis. The colouring matter of the strawberry is very soluble both in water and alcohol, the solution giving a characteristic absorption spectrum, a dark band occurring in the green. The colouring matter contains iron in an organic form. Tannic acid has little or no action upon the strawberry, so that the "strawberry tea" is justifiable dietetically. The strawberry is remarkably soluble in alkaline solutions such as may be taken to represent the alkaline digestive juices of the intestine. In fact, practically the whole of the fruit is easily and rapidly soluble in weak alkali, excepting, of course, the seeds, which, moreover, are rejected by the organism. The oil extracted from the strawberry has a most attractive flavour and its amount, calculated on the dried fruit, is not inconsiderable. The unripe or unsound strawberry shows a much higher proportion of acid than does the sound fruit, a fact which amply accounts for the consumption of unsound fruit giving rise to diarrhœa and colic.

IN THE MATTER OF PATENT MEDICINES.

TREATED as a purely academic question the inquiry addressed to us by a correspondent in a letter published at p. 111 is not one difficult to answer. He asks whether a medical man knowing the formula of a patented proprietary article can have it made up as a prescription and, further, whether he may do so if it can only be made by a special patented process. To this reply may be made that the proprietor of any manufactured article protected by letters patent or of any process so protected is entitled to defend his rights against infringement and that he is likely to take steps to do so if he can discover that such infringement has taken place. When, however, the principles applicable to the enforcement of patent rights are applied to concrete cases of proprietary medicines there are matters of some importance which have to be taken into consideration. The law does not seem to be affected by the question of public policy involved in assigning monopolies with regard to the treatment of disease to certain persons. In a case relating to the sale of poisons under the Pharmacy Act of 1868[1] it was apparently taken for granted that the protection of medicinal compounds under the Patent Acts was a recognised practice, for in that case it was suggested that "chlorodyne" was exempted as a "patent medicine" from the operation of sections of the Pharmacy Act regulating the sale of poisons and the court only refused to accept that view on the ground that chlorodyne was merely a proprietary article in respect of which no letters patent had been granted. If, however, in theory combinations of drugs of a novel character can be invented and patented, in practice it will not be found that this often occurs. The man of science does not desire to create monopolies in connexion with the practice of medicine for his own benefit and the owner of the Miraculous Pill or Wonder-working Potion has not, as a rule, got a patentable article to register. He has obtained possession of a formula which is possibly useful and effective but which at the same time is one which medical men have used before and for which no novelty can be claimed. In these circumstances he does not take out letters patent for his nostrum but merely assigns to it a fancy name which he registers as a trade-mark and under which he advertises his wares. In this manner he can protect his trade without endangering it by making known how his so-called "patent medicine" is compounded. Were he to take out letters patent he would run the risk of others acquiring easily possession of his secret; it would in many cases be very difficult for him to detect them in using it and an attempt to prevent them might involve costly and possibly unsuccessful litigation. It would be awkward for the owner of the Miraculous Pill to have proved in open court that his formula was a simple one which any medical man might have prescribed and therefore not entitled to be the subject of patent rights and that in any case the pill's intrinsic value was about one-hundredth part of its sale price. We are not sufficiently aware of the circumstances in which our correspondent "Inquirer" is placed or of his intentions with regard to the patented article concerning which he writes to advise him upon the concrete case which he, no doubt, has in his mind. We can only say that the infringement of the rights conferred by letters patent can be prevented by legal process and that medicinal compounds or processes for their manufacture do not, as such, form any exception to the rule.

RADIUM AND DIAMONDS.

THE influence of radio-emanations on the constitution of matter is very curiously illustrated in some recent experiments made by Sir William Crookes. According to the results, if radium comes to be a common commodity amongst us some dismay may be caused to those who wear diamonds on finding that the carbon crystal under the influence of radium threatens to return to its less attractive form of graphite or crystalline black carbon. On the other hand, radium may turn out to be a "diamond improver." It is well known that radium emanations possess the property of darkening transparent bodies upon which they impinge and now Sir William Crookes has shown that this also holds good in the case of diamonds. The emanations convert not only the surface into graphite but alter also the colour of the body of the stone. It is therefore suggested that this observation may prove to be of commercial importance. For example, "if off colour stones can be lightened their value will increase, while if the prolonged action of radium is to communicate to them a decided colour they would be worth much more as fancy stones." This may add considerably to the business of the jeweller who, for a consideration, might undertake to submit "off jewels" to burial in radium for a season.

THE ROYAL ALBERT ASYLUM FOR IDIOTS, LANCASTER.

THE Royal Albert Asylum at Lancaster has cost in the last 40 years nearly £200,000 and has just received an important addition to its means of usefulness by the building of a fine block of industrial schools and workshops. The cost of these has been nearly £7000, of which sum Mr. Herbert Storey, the High Sheriff of Lancashire, has generously given £5000. The original workshops were inadequate owing to the increased number of patients capable of industrial training and from the rise of other buildings had become dark and unsuitable. Mr. Storey therefore offered to furnish a permanent memorial of the coronation of the King, as his father, the late Sir Thomas Storey, in like manner erected in the grounds the

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[1] Pharmaceutical Society v. Piper and Co., 1893, 1 Q.B. 686.

Storey Home for 40 feeble-minded girls as a memorial of Queen Victoria's Diamond Jubilee. In the new buildings are shops for shoemaking, basket-making, cabinet-making, and wood-carving. There are tailors' shops, a brush and mat-makers' shop, and printers' and bookbinders' shop, while the basement is divided into a large playroom and an upholsterers' and sashcord makers' shop. Much attention has been given to the ventilation and lighting. The opening by Mr. Storey took place on June 24th in the presence of a large number of friends and supporters of the asylum. Sir J. T. Hibbert, chairman of the central committee, said the asylum had its beginning in November, 1864, when Mr. James Brunton of Morecambe offered to give £2000 "for the establishment of an asylum for the reception, care, and training of idiot children." Now there are 627 feeble-minded inmates of both sexes. The opening ceremony was brief. The door having been unlocked, Lord Muncaster, the Lord Lieutenant of Cumberland, formally accepted the gift. At the luncheon which followed, Mr. Storey in replying to the toast of his health said that while he did not anticipate that the new workshops would turn out persons so skilled as those endowed with complete faculties he looked forward to the training in habits of industry enabling the patients to earn their living. Sir John Hibbert said they still wanted a building for the reception of 20 or 30 new-comers where they might undergo a sort of quarantine. He felt sure that the money would be forthcoming before the end of the year and we may all hope that he will prove a true prophet.

NERVOUS DISEASES AND SYMPTOMS OF THE SCHOOL AGE.

UNDER the above title Dr. T. S. Clouston, President of the Royal College of Physicians of Edinburgh, contributed a paper to the *Parents' Review* for July which is of considerable interest to both medical and lay readers. He begins with a quotation from Dr. W. Leslie Mackenzie that "the nervous system of the growing child is the cardinal physiological problem of the educational life" and then proceeds to describe in simple, non-technical language some of the more important phases of the activity of the nervous system and their derangements. The nervous symptoms occurring in children during the school age—that is, from six to 18 years—he discusses under five headings—namely, disturbances of the muscular system originating in the brain, comprising epilepsy, chorea, hysterical fits, stammering, and squint; disturbances of sleep, especially insomnia; disturbances of nutrition the result of nerve changes; sensory disturbances, notably the different varieties of headaches; and lastly, mental disturbances. This section of the paper, as might be expected from Dr. Clouston, is most suggestive and forms an interesting *résumé* of some very important facts relative to the abnormal psychology of childhood. We are glad to notice that at the very outset Dr. Clouston states emphatically that "there are many popular misconceptions about 'mental symptoms' and moral defects which sensible parents and teachers should particularly avoid." He points out that these symptoms should be regarded in a great many cases as the equivalents in the mental sphere of headache and other such derangements on the sensory side. Impulsiveness, for example, which is merely a defect of mental inhibition or control, he points out as varying in some children with their state of health; again, laziness and stupidity may in many cases be nervous and not moral defects and many other perversions are to be regarded as mere symptoms of mental derangement or non-development. It is very important to realise that they should be carefully and judiciously treated on physiological and medical lines rather than by pedagogic and disciplinary methods. We can commend Dr. Clouston's paper to the notice of all who are interested in the education of children, more especially the weakly and backward. His general aims may be gathered from his closing paragraph which we quote in full: "The doctor and the physiologists nowadays strongly incline to the education theory of turning out a good all-round animal to face up the hazards of life; and the highest and most useful faculty, the one most worth cultivating, is inhibition—self-control. That can only be attained in most cases through health of body and soundness of mind."

ASSOCIATION OF BRITISH POSTAL MEDICAL OFFICERS.

THE annual dinner of this association was held on the evening of July 1st at the Whitehall Rooms of the Hôtel Métropole, London, Dr. J. Walton Browne, the President, being in the chair. A large number of medical officers attached to the Post Office and their guests were present but the gathering was not perhaps quite so numerously attended as in previous recent years. After the loyal toasts the President proposed the health of the Right Hon. Lord Stanley, C.B., M.P., His Majesty's Postmaster-General. Lord Stanley made a sympathetic reply and alluding to the lengthy toast list observed that medical men were evidently very unselfish seeing that they wished good health to so many people—a fact which must necessarily be to their own disadvantage. He also humorously referred to the fact that although he had only been recently appointed to the office of Postmaster-General those who had drawn up the programme had arranged that the title of the next song should be "Good Bye." The other toasts were "The Imperial Forces," proposed by Mr. Edward Bond, M.P., and responded to by Colonel S. Raffles Thompson; "The Secretary and Other Executive Officers of the Post Office," proposed by Sir Thomas Roe, M.P., and replied to by Mr. H. Babington Smith, C.S.I., the secretary to the Post Office, who, like the Postmaster-General, referred to the excellent work done by the medical officers; "The Association of British Postal Medical Officers," proposed by Mr. Eugene Wason, M.P., and responded to by the President; and "Our Guests," proposed by Dr. John Dunlop and replied to by Sir Dyce Duckworth. The proceedings were enlivened by pleasant music, songs being admirably rendered, in the intervals between the toasts, by Miss Annie Bartle, Miss Ethel Bevans, and Mr. Franklin Clive. The Imperial orchestra played a selection during the dinner.

THE CHILDREN'S COUNTRY HOLIDAYS FUND.

THE rôle which pure air plays in health and its conservation is now recognised on all hands and so is the fact that country life and scenes have a valuable effect upon the mind. Especially is this latter the case with children. If proof were required it is only necessary to be present at the return of a batch of poor children to one of the great railway termini in London after a sojourn in the country. Their complexions tell the tale of improved health and their tongues run ceaselessly in the discussion of their new ideas. There are several societies the object of which is to provide an annual country holiday to the poor children of London but the support which they receive from the charitable public is not at all commensurate with the undoubted good which they do. Among them is the Children's Country Holidays Fund the chairman of which has just received from Sir William J. Collins a letter which has been forwarded to us for publication. From it we take the following extracts: "Of some 800,000 children attending the public elementary schools of London only a small proportion can in any year enjoy the happy fortnight in a cottage home for which your fund provides the opportunity. Even in the case for which a change is urgently necessary there will, I fear, be many disappointments unless the public will give a larger measure of support to your efforts and those of the ladies and gentlemen who give the fund such invaluable voluntary assistance. ...... To those who know as I do the home conditions of many of our humbler citizens in Central, East, and South London the possibility of any reduction in the number of children who will have a chance of this happy and health-giving fortnight in the country this year can only be contemplated with dismay and profound regret." Sir William Collins, who is chairman of the education committee of the London County Council as well as surgeon to two well-known charities, has had exceptional opportunities for knowing the conditions under which the poor of London live and we trust that his testimony as to the needs of some of London's little ones will have the effect of bringing to the coffers of the Children's Country Holidays Fund the money which is so urgently needed. Subscriptions may be sent to the offices of the fund, 18, Buckingham-street, Strand, London, W.C.

PRIZE-GIVING AT ST. MARY'S HOSPITAL.

Dr. W. B. Cheadle presided over the distribution of prizes to the successful students of St. Mary's Hospital Medical School on June 29th. The ceremony was held in the Medical School of St. Mary's Hospital and the prizes were given away by the Lord Chief Justice of England, Lord Alverstone, who, addressing himself to the students, observed that in no profession more than the medical was it essential to maintain the highest ideal of honour, and, moreover, there was no profession which brought out more the good qualities of a man. He particularly emphasised the importance of concentrating the mind upon the particular case presented for consideration and he reminded his hearers that in the practice of medicine there was scope for individual thought and independent research. Passing on to the discussion of the use and abuse of athletic sports he gave it as his opinion that sports ought not to be made the object of life but should be viewed as means whereby a man's life-work could be better done.

THE MYSTIC ELEMENT IN MEDICINE.

Professor F. Dercum of Jefferson Medical College, Philadelphia, in an interesting address delivered in May last at the twentieth anniversary of the foundation of the Philadelphia Neurological Society, dealt with the subject of mysticism in medicine. Since time immemorial superstition and magic have played a rôle in the treatment of disease. 4000 years ago the Egyptian healers subjected their patients to mysterious "passes" and manipulations, after which the patients were enveloped in the skins of sacred animals and conveyed to holy places where the treatment might be completed. The practice of uttering words and phrases in a hysterical delirium by healers supposed temporarily to be "possessed" of a god or spirit is also of very ancient date. The priestesses of Delphi and of other Greek temples did so in ancient times and the Shamans of Siberia and the priests of many savage and barbarous tribes still practise rites in which they pass into somnambulistic and hysterical states and give utterance to words which are regarded by the people as inspired by the god or spirit invoked, or do extraordinary deeds to cure disease. Thus in Siberia, says Professor Dercum, the priest, after his invocations, will "suck the part of the body of the patient which aches the most and finally take out of his mouth either a thorn, an insect, a stone, or some other object, which he then asserts to have been the cause of the pain." Rubbing and massage have been used for centuries but the ancients combined them with movements and passes which were believed to have a magic virtue. Cælius Aurelianus prescribed friction by the hand for the cure of pleurisy and gave instructions for the manipulation of the insane and of epileptics. It is said that "when the manipulations were carried to excess the patients fell into a [hypnotic] lethargic sleep." Agrippa in the sixteenth century and the famous Paracelsus and van Helmont were among the earlier advocates of the doctrine of an animal magnetism. Magnets were used to heal illnesses, the theory of animal magnetism and the healing of the sick by the aid of magnets being constituents of the popular belief of the Middle Ages. Metals were also regarded by many as being possessed of mysterious virtues in the treatment of disease, an old belief traceable through Paul of Ægina and Galen to Aristotle. Lenoble in 1754 and Hall in 1774 are said to have effected wonderful cures by magnets, the theory of these operators being a special development of the popular belief to the effect that the heavenly spheres exercised a magnetic influence over human bodies and that the correct use of magnets was the only means of rectifying those ailments which arise from disturbance of the animal magnetism of the body. Many of these beliefs and practices, says Professor Dercum, were the prelude to the methods developed by Mesmer during the century following. While mesmerism was at its height three schools of animal magnetism sprang up. The first, that to which Mesmer himself belonged, asserted that the effects obtained were due to physical agencies alone. The means employed were friction, touches, passes, and grasping, the resulting phenomena being explained on the theory of a magnetic fluid or ether passing from the magnetiser to his subject or *vice versâ*. The school of Barbarin maintained that faith was the principal factor required, in consequence of which they were known as spiritualists. To their minds all physical means were merely accessories. The third school, that of the Marquis de Puysegur, occupied a middle position, explaining the results obtained by physical or psychical means as the case required. The adoption of hypnosis and its scientific study by the schools of Paris and Nancy three decades ago are regarded by Professor Dercum as the beginning of the scientific era, the work of Charcot, Richer, Liebault, and Bernheim having gone far to explain the nature (physiological process) of hypnotism and its relationship especially to the great neurosis hysteria. More than all others these two schools have succeeded, he considers, in placing the practice of hypnotism on a scientific basis. The special development of metallo-therapy, however, Professor Dercum regards as having proved nothing beyond the fact that "suggestion" plays the most important part and that the metals do not act by producing "emanations" or other subtle effects comparable with invisible radiations.

THE EVOLUTION OF THE "REST" TREATMENT.

Dr. S. Weir Mitchell of Philadelphia has published in the *Journal of Nervous and Mental Disease* for June an interesting account of the mode in which he was led to evolve the method of treatment of neurasthenia and other nervous disorders by rest. Very often it is found that discoveries made through accident prove to be of value and this, says Dr. Mitchell, was the way his discovery was made. During the Civil War between the North and South States "a great many cases of what we called acute exhaustion fell into the hands of Dr. M——, Dr. K——, and myself. These were men who, being tired by much marching, gave out suddenly at the end of some unusual exertion and remained for weeks, perhaps months, in a pitiable state of what we should call to-day neurasthenia." In these cases occurring in the war the neurasthenia, says Dr. Mitchell, came on with strange abruptness. It was more marked in intensity "and also more certainly curable than are most of the graver male cases of to-day." Complet rest and plentiful diet usually restored their strength and enabled them to return to the front. In 1874 a lady with marked neurasthenia came under care. She was a tall, large, gaunt woman who had borne several children in rapid succession and who had overworked herself in charitable and other work to an extent far beyond her strength. Her weight was about seven stones, she was pale and anæmic, and could not climb the stairs owing to general weakness. Her appetite was feeble and capricious and she was only able to retain and to digest her meals if she lay down in a noiseless and darkened room. But any disturbance, excitement, or effort caused nausea and immediate rejection of the meal. "With care she could retain enough food to preserve her life and hardly do more." Staying in bed for a week brought on symptoms of violent emesis, with rejection of food and consequent extreme exhaustion. Having seen cases of tabes and rheumatic stiffness of joints improved by massage it occurred at this juncture to Dr. Mitchell that massage might also prove beneficial to his patient and that in this way her muscles might be exercised without fatigue. He also hoped that the appetite would be restored by this means and employed a nurse to massage his patient systematically several times a day. A few days later the electric (galvanic) current was applied to the muscles. Entire rest and seclusion were insisted on during this period. In ten days the patient began to improve. "The woman had found a new tonic, hope, and blossomed like a rose. Her symptoms passed away one by one." Her diet was steadily increased and malt with phosphates of iron was given regularly and daily. "I had found, in short," says Dr. Mitchell, "that with this combination of seclusion, massage, and electricity I could overfeed the patient until I had brought her to a state of entire health. In two months she gained 40 pounds and was a cheerful, blooming woman, fit to do as she pleased." Simple rest as a treatment had been suggested but not in cases of neurasthenia, adds Dr. Mitchell. Massage has a long history and is daily coming into wider use in treatment.

THE INCORPORATED SOCIETY OF MEDICAL OFFICERS OF HEALTH.

THE annual provincial meeting of the Incorporated Society of Medical Officers of Health was held at Newcastle-on-Tyne on July 2nd and was presided over by Dr. Joseph Groves. A paper was read by Dr. J. J. Boyd, medical officer of health of South Shields, in which he gave the results of investigations which he had made into the distribution of scarlet fever in different parts of South Shields during the 12 years 1892–1903. These investigations were of a very painstaking and thorough character and might well serve as a basis for observations in other towns. Dr. Boyd divided the borough into 86 districts made up practically of the enumeration districts as defined for the census of 1901. For each of these districts he obtained from the last census returns full details of population including the numbers living at different age periods, together with the number and size of the houses. He was thus able to calculate an attack rate corrected for age periods. With regard to the three years 1901–1903 he gave full information as to each of the 86 districts with respect to the corrected attack rate, the percentage of cases isolated in hospital, the proportion of tenements of less than five rooms, the number of persons per room, the social condition of the inhabitants, and the physical features of the localities, and with regard to the nine years 1892–1900 he gave the uncorrected average annual attack rate. The conclusions to which he came as the result of these investigations were that the physical features of a district did not apparently appreciably influence either the extent of the endemicity of the disease or its spread in epidemic times, that very poor class districts were apparently less subject to the disease than were more respectable neighbourhoods, and that hospital isolation if carried out to a high degree, that is to say, the isolation of at least 50 per cent. of the total cases, lessened the prevalence and spread of the disease. Dr. Boyd thought that the figures for the whole 12 years amply proved that in South Shields the isolation of scarlet fever in hospital had not resulted in an increased prevalence of the disease nor had it intensified its virulence. Mr. H. E. Armstrong said that he so thoroughly believed in the isolation in hospital of cases of scarlet fever that he had persuaded the Newcastle city council to expend £53,000 upon extensions to the existing hospital. Dr. T. Eustace Hill, Mr. Herbert Jones, Dr. John Taylor, Dr. W. W. Stainthorpe, Mr. T. Wilson, Dr. J. W. Hembrough, Mr. J. G. Willis, and the President also took part in the discussion and spoke approvingly of hospital isolation. At the close of the meeting the members of the society with their friends lunched together and in the afternoon a visit was paid to the Newcastle fever hospital at Walker-gate and to Tynemouth. At the fever hospital Dr. Sydney G. Mostyn, the medical superintendent, gave a demonstration of the steriliser for infected excreta which was designed in 1894 by Mr. Armstrong and Mr. W. George Laws, M.Inst.C.E., the city engineer. The essential features of the steriliser are the admission of steam into a cylinder into which the excreta have been discharged and the cooling of the contents of the cylinder after sterilisation and prior to being emptied into the sewer. Suitable non-return valves are provided completely to close the cylinder to all openings except that of the steam-pipe. Steam can also be admitted to the interior of the soil-pipe and of the waste-pipe from the slop sink.

MULTIPLE NEURITIS DUE TO GONORRHŒA.

MULTIPLE neuritis is a rare complication of gonorrhœa. At the meeting of the Société Médicale des Hôpitaux of Paris on June 23rd M. Ménetrier described a case which is important not only on account of the intensity of the symptoms but also because it appears to be the only one in which a necropsy was made. A man, aged 46 years, was admitted to hospital on Oct. 27th, 1903, suffering from gonorrhœa and complaining of pains and of almost complete powerlessness of his four limbs, which confined him to bed. The patient had previously had several attacks of gonorrhœa which lasted five or six months. More than six months before admission the present attack of gonorrhœa began and a month later he commenced to feel weak in his legs. This symptom was most marked at the end of the day under the influence of fatigue. It increased and at the end of September he had to give up work. At the same time he felt pains in the lower limbs which were so severe as to prevent him from sleeping. The pains extended to the upper limbs, in which also power was lost but to a much less degree than in the lower limbs. On admission the discharge was still in full activity. The pus was almost completely composed of mononuclear cells and contained an abundance of gonococci. The lower limbs were so weak that the patient could not raise them from the bed and the muscles, particularly the adductors, the quadriceps, and the muscles of the calf, were atrophied. The sensibility of the lower limbs was blunted. Deep pressure was very painful, the muscles being hyperæsthetic. Pressure on the nerves was equally painful. There were also spontaneous pains and tingling in the lower limbs. The knee-jerks were absent. In the upper limbs the paralysis was less though the muscular masses of the arm, forearm, and hand were atrophied. Movements of the upper limbs were feeble and incoördinate. Sensory troubles were also less severe; cutaneous sensibility was preserved and the muscles were less tender than in the lower limbs. In the trunk the muscular atrophy was less marked but the patient had great difficulty in sitting up. Faradic irritability was entirely lost in the lower limbs; in the upper limbs it was preserved but a strong current was necessary in order to obtain a reaction. In the forearm the flexors responded more readily than the extensors; the extensor indicis responded feebly and the common extensor of the fingers not at all. On the following days the paralysis of the upper limbs increased; soon movements of the arms became impossible and those of the forearm became limited to flexion of the fingers. Then the paralysis spread to the trunk and neck; the patient could not sit up or maintain his head in position when it had been raised from the bed. He lay inert but always complaining of sharp pains, principally in the upper limbs. His general condition became worse and a bed-sore rapidly formed over the sacrum. Finally he became feverish, the tongue became dry and dirty, the respiration became difficult, and fine subcrepitant râles were heard at a spot at the right base. Death from broncho-pneumonia took place on Nov. 13th. At the necropsy the brain showed only congestion of the pia mater. The pia mater of the cord was also congested. The large nerve trunks (sciatic nerve and brachial plexus) as well as the smaller nerves (branches of the radial and crural nerves) appeared normal to the naked eye but were preserved for histological examination. The muscles of the thigh and forearm, though diminished in volume, were of good colour and showed no changes to the naked eye. The lungs were consolidated at the bases. On section a drop of pus trickled from the orifices of the bronchi. The liver was large and yellow and appeared to be fatty. The kidneys were much congested, soft, and tumefied. The urine contained in the bladder was purulent and the mucous membrane was congested. Microscopic examination of the brain was negative. In the cord the only lesions found were chromatolysis, globular swelling, and vacuolar changes in some of the cells of the anterior cornua. These changes occurred principally in the cervical and lumbar regions. In the nerves pronounced changes were found at the peripheral ends which became less marked as the central end was approached. Not a single fibre in the radial nerve was normal; the myelin was broken up or absent and the axis cylinders were irregularly swollen, fragmented, or destroyed. The lesions were purely degenerative, there being no multiplication of nuclei. A branch of the crural nerve showed similar changes. The fibres of the brachial plexus and sciatic nerve were almost intact, showing only fragmentation of myelin in a few without changes in the axis cylinders. The lesions in the spinal cord may be explained as due to the same toxic cause which produced the neuritis but possibly they were secondary to the latter. Marinesco has shown that such cellular changes may result from multiple neuritis and also from traumatic neuritis.

THE WRECK OF THE EMIGRANT SHIP "NORGE."

ONE of the most lamentable disasters at sea that has occurred during recent years took place in the North Atlantic Ocean on June 28th, when the Danish emigrant ship *Norge*, carrying a crew of 71 men and nearly 700 passengers, consisting, so far as is at present known, of Swedes, Danes, and Russian Jews, struck on Rockall, a rock 75 feet high, about 140 miles distant from St. Kilda, the nearest land. The *Norge* belonged to the United Steamship Company of Copenhagen and left that port on June 22nd for New York. The survivors have been rescued in different boats and landed at Stornoway, Aberdeen, and Grimsby, but it is feared that more than 500 lives have been lost. As yet no authentic details of the cause of the catastrophe have been received; it is only known with certainty that at eight o'clock on the morning of the disaster the passengers felt a shock and almost immediately the vessel began to sink. Stories of gallant heroism on the part of the crew, only a few of whom were saved, and of the passengers are told by the survivors. It is said that the boats were improperly managed, some of them being overcrowded and others only half full. This, if true, was no doubt due to the excited state of the passengers, but the fact that only a few of the crew were saved shows that those in charge of the vessel accepted to the full their responsibilities.

FOOD PRESERVATIVES.

A COMMITTEE has recently been sitting in New York in order to collect evidence as to adulteration and more especially as to the use of preservatives in food. The committee consisted of Dr. William Frear (chairman), Dr. E. H. Jenkins, Professor M. A. Scovel, Professor H. A. Weber, and Dr. H. A. Wiley. In discussing the use of preservatives Dr. Frear is reported to have said: "The testimony of the manufacturers has generally been that such goods cannot be packed without preservatives without a certain percentage of loss. ...... The best opinion seems to be against the use of preservatives as a general proposition as injurious; but, on the other hand, it is argued that the quantity used is so small as to be harmless. The manufacturer seems to believe that it ought to be enough if all goods containing preservatives were plainly labeled so that the consumer could see for himself and take the responsibility for what he is taking into his stomach." It is expected that the Secretary of Agriculture in a few months will be able to promulgate a set of standards which will define what is meant by purity in foods and what constitutes adulteration.

THE USE OF RADIUM IN SECTION CUTTING.

THE electrification of sections as they "peel off" the microtome in section cutting is often a source of trouble which leads in fact to the sections adhering to each other and to the knife of the microtome. Professor Henry Dixon, of the Botanical Laboratory, Trinity College, Dublin, bearing in mind the property of radio-emanations of discharging an electrical condition, ingeniously applies this property to the prevention of this source of annoyance. In a note in *Nature* he points out that these undesirable phenomena may be completely avoided by fixing a tube containing five milligrammes of radium bromide on the microtome knife in close proximity to the place where the paraffin-wax ribbon is forming. The breaking up of sections and consequent loss of continuity in the seriation may be thus avoided, the radiations from the radium discharging the electrification of the paraffin sections by ionising the air in their neighbourhood. This very ingenious device may probably be applied with equally satisfactory results in other instances where the cause of the trouble—namely, the electrification of sections or thin shavings—is the same.

THE CARE OF FEMALE INEBRIATES.

IN the *Standard* of July 1st there is a letter on the subject of female inebriates by Sir Alfred J. Reynolds, Sheriff of the City of London, which we are sure will be read with satisfaction by all right-thinking people. In it he announces that the London County Council has made ample arrangements for the admission of all classes of females committed within the metropolitan area (exclusive of the City) into inebriate reformatories certified under the Inebriates Act of 1898. All London cases can now therefore be committed without restriction as to age, condition, health, character, or religion. Sir Alfred Reynolds points out that during the year which ended on March 31st, to say nothing of the vast number of cases disposed of by fines, as many as 8256 women were committed by London magistrates to Holloway Prison for drunkenness and disorderly conduct alone Of these 580 had been three or more times convicted within the 12 months next preceding their last offence, while 4953 or 60 per cent of this number, had previous convictions for like offences The London County Council is to be congratulated upon having by its action facilitated the working of the Inebriates Act and it is hoped that not only will the expense to the public caused by this class of offenders against the social order be lessened but that much good in many other ways may accrue

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The Marquis of Londonderry, President of the Board of Education has consented to receive on Monday next *July 11th at the Privy Council Office a deputation* of members of the medical profession who will present to him a petition in favour of the compulsory teaching of hygiene and temperance in public elementary schools The petition bears the signatures of 14 718 members of the medical profession

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The Wightman lecture of the Society for the Study of Disease in Children will be delivered by Mr R Clement Lucas at the Victoria Hall Hotel Cecil London on Friday July 15th at 6 30 P M The title of the lecture is 'The Hereditary Bias and Early Environment in their Relation to the Diseases and Defects of Children The lecture is open to all members of the medical profession

THE VISIT OF THE KING AND QUEEN TO ST BARTHOLOMEW'S HOSPITAL

The laying of the foundation stone of the new building of St Bartholomew s Hospital by His Majesty the King took place on July 6th The King and Queen on arriving at the hospital were received in an ante room adjacent to an enormous marquee holding over 3000 invited guests Their Majesties were greeted by the Prince of Wales President of the hospital and Dr S Gee the senior physician to the hospital and Mr John Langton the senior surgeon were presented to the King The Royal guests were then conducted to the marquee where prayers having been read by the Bishop of London the Prince of Wales presented an address to the King and Queen which he read distinctly and loudly so that it could be easily heard by all in that vast assembly He referred to the foundation of the hospital in the year 1123 and commented on the record of the hospital since the year 1547 At the present day he said that St Bartholomew s Hospital contained 740 beds inclusive of 70 in its country branch at Swanley During the last 50 years the hospital had given gratuitous relief to more than *7 000 000* of the sick poor The students working daily within

fame of their alma mater all over the world The rapid

ice during recent years had com

ng on the advice of their eminent

late the entire rebuilding of the hospital as funds became available They had issued an appeal to the public to *enable them* to carry out the rebuilding referred to To the City of London and its wealthy citizens that appeal ought to come home with peculiar force for the hospital in its present development was in great measure the creation of the inhabitants of what had been termed 'the wealthiest square mile in the world St Bartholomew s Hospital had not asked for help for more than 150 years and the governors trusted that the presence of their Majesties that day might *be regarded by the public as showing their Majesties desire* that the rebuilding of that great and ancient institution might not be impeded and crippled for lack of funds

To this address the King returned the following reply 'The Queen and I have great pleasure in being present to-day to lay the foundation stone of the new building of this famous hospital and we thank you heartily for the loyal address which our dear son as President has presented on behalf of the governing body You have reminded us of the antiquity of this foundation and of the favour shown to it by so many of our Royal predecessors I recollect the lively satisfaction which I felt in holding the presidency of this hospital for so many years and I shall continue to take the deepest personal interest in its work and fortunes We are happy to see that those who are responsible for carrying on the excellent work have shown by their scheme for rebuilding the hospital their intention that the future of St Bartholomew s shall not be unworthy of its fine traditions in the past The names of the famous men educated here prove that an institution of this kind is not merely a refuge for the suffering but that it is also a school for the advancement of the science and practice of medicine and in this way the influence of this and other great hospitals of this country extends beyond merely local limits to foreign countries and the colonies and dependencies of our Empire We confidently believe that our subjects and especially the citizens of London will not fail to show interest in the progress of the scheme for rebuilding the hospital nor allow the efficiency of the undertaking to be hindered by want of the necessary funds

The Treasurer Sir **Trevor Lawrence** then formally asked the King to be pleased to lay the foundation stone and on the Royal assent being given the architect Mr E B I Anson was presented by the Treasurer and submitted to the King plans of the building proposed to be erected and then handed to His Majesty the trowel and mallet with which the King performed the ceremony of laying the foundation stone

The **Treasurer** then approached the Queen and asked if it was *her pleasure to receive her* charge as a Governor of the Hospital Her Majesty being the first lady elected a Governor as well as the first donor to the building fund The Queen having assented the charge was read by the Clerk of the Hospital Mr W H Cross in accordance with ancient custom and was as follows —

> Your Majesty having been elected and chosen a Governor of St.

The Treasurer then presented to Her Majesty a copy of the governor s charge and a governor s staff in miniature after which Madame Albani assisted by Miss Catherine Jones and other talented singers gave a well applauded rendering of Sir Edward Elgar s arrangement of God Save the King The royal party then *departed passing on their* return journey through the great quadrangle of the hospital amid the acclamations of many of the patients whose beds had been placed in the open air The King as he was leaving was pleased to announce that he would contribute towards the building fund the sum of £1000

In the special appeal now issued by the governor of St Bartholomew s Hospital the necessity is explained of the need the hospital labours under of rebuilding the institution in accordance *with modern requirements* The most pressing necessity of the time is the construction at a cost of upwards of £100 000 of new out patients casualty and special departments the foundation stone of which has just been laid by His Majesty the King This building will contain the out patients and casualty departments the special departments the resident medical officers quarters

resident medical officers quarters will be on the Giltspur-street frontage, where also there will be a common room and luncheon room for the students In the rear of the resident medical officers quarters there will be a large waiting hall for out patients and casualty patients Surrounding this waiting hall there will be 20 medical and surgical consulting rooms Rooms will also be provided for the reception and treatment of accident and emergency cases The dispensary will be in the rear of the waiting hall The hospital kitchen will be on the second floor over the dispensary The upper floors over the waiting hall will contain rooms for the treatment of surgical and medical out patients and the following special departments diseases of women, ophthalmic, diseases of the skin, aural, diseases of the throat, orthopædic, dental, and electric. Rooms containing ten beds will be provided in the building for the reception of patients who remain only a few hours in the hospital. Ample means of exit in case of fire or other emergencies will be provided and the building will be constructed with fire-resisting materials and fitted with the most approved sanitary and other appliances.

ARMY MEDICAL DEPARTMENT REPORT FOR 1902.[1]

THE nation and the Government are confronted at the present moment with a most comprehensive and difficult problem. It is how consistently with sound economy to get an army that shall be efficient and at the same time suited to the needs of the country and the empire. That is the task on which Mr. Arnold-Forster and the Government are at present engaged and the War Minister apparently does not despair of being able to accomplish it. At first sight the new volume of Army Medical Reports just issued would seem to have no direct and practical bearing on this problem, but a very little consideration will soon dispel that idea. To begin with it is as impossible to have an army without recruits as to have a river without water and that section of the report devoted to the recruiting of the army is calculated to arrest attention. It tells us that the total number of recruits rejected in 1902, inclusive of those who were discharged as unfit for service within three months of enlistment, was equal to a ratio of 325·42 per 1000 of those who presented themselves. Whether that portion of the population from which army recruits are mainly drawn can or cannot be considered as affording any criterion of the health and physique of the general population the figures nevertheless show the existence of conditions in our midst which point to want of proper food, good air, and wholesome surroundings, and fully justify the inquiries that are taking place. Moreover, it is a platitude to say that as far as our army is concerned health and physical efficiency go together and that these depend upon hygienic conditions the provision of which usually spells money.

Turning, however, to the more immediate subject of the report itself we select the following points from the excellent preliminary statement which in the course of the first few pages summarises the health of the troops at home and abroad. The average strength of the European troops in 1902, exclusive of the troops employed in South Africa during the period Jan. 1st to May 31st, was 254,357 warrant officers, non-commissioned officers, and men. The total number of admissions to hospital was 191,250 and the total deaths were 2152. The admissions represent a ratio of 751·9 per 1000 of the strength; the deaths one of 7·52 per 1000 on a strength of 286,026, which includes detached men not shown in the returns received. Amongst the troops serving in the United Kingdom the admission, mortality, and constantly sick rates were lower than in 1901. There were 114 admissions for, and 35 deaths from, enteric fever, which shows a fractional decrease in both the admission and mortality rates as compared with 1901 and is practically the same as the average rate. At Gibraltar the admission and constantly sick rates were lower but the mortality was somewhat higher than in 1901. In the Malta command, which included Crete, there was a decrease in the admission, mortality, and constantly sick rates. The admission and mortality rates for enteric fever were lower than in 1900 and considerably below the average rate. Malarial fever was again very prevalent in Crete, although the admission rate for the command was lower than in the previous year. In Canada the health of the troops was good, there being a decrease in the admission, mortality, and constantly sick rates. In Bermuda there was a serious epidemic outbreak of enteric fever and as the civil population also suffered to a large extent a commission was convened to inquire into the origin and spread of the disease. The opinion was that the enteric fever was of South African origin, brought to the colony by Boer prisoners of war. In Western Africa malarial fevers, though not so prevalent as in previous years, furnished the majority of the admissions. In Mauritius the admission, constantly sick, and death rates were higher than in 1901. Plague continued throughout the year amongst the civil population, no case occurring among the troops. Malarial fevers were prevalent, but there was a decrease in the admission rate as compared with 1901. In Ceylon the health of the troops was satisfactory. There was a slight increase in the ratio for venereal diseases as compared with the previous year. There was also an increase in the admission rate for enteric fever.

No case occurred amongst the troops at Diyatalawa, notwithstanding that the disease was more or less prevalent in the adjacent Boer camp throughout the year. In China the admission, mortality, and constantly sick rates were higher than in 1901. Malarial fevers showed a large increase as compared with the previous year. An epidemic of dengue which first attacked the native population and afterwards spread to the European community occurred during the summer and autumn of the year. The disease was of a severe type and was the cause of a large number of admissions among the troops as well as amongst the women and children. Plague was again epidemic and there were also a large number of cases of cholera among the civil population, but among the troops only a single admission under each of these diseases occurred. In India there were a decrease in the admission, constantly sick, and invaliding ratios and an increase in the mortality rate. The chief causes of sickness as usual were malarial fevers and venereal diseases, which together caused 49·63 per cent. of the admissions for all diseases. Malarial fevers and dysentery were less prevalent than in 1901 while venereal diseases and enteric fever both showed an increase as compared with the previous year. As regards enteric fever it is noted that the satisfactory steady annual decrease which had been taking place since 1899 has not been maintained and there has also been an increased death-rate from the disease. The increase in the number of admissions, occurring as they do for the most part in young soldiers during their first year's service in India, is attributed to the arrival of large drafts from home and reliefs from active service in South Africa. The chief points observed during 1902 in connexion with the causation of enteric fever in India are discussed at length. During the year three fatal cases of cholera occurred and there were also four admissions for plague, one of which terminated fatally. In Egypt the admission, death, and constantly sick rates were lower than in 1901 and were also lower than the rates for the decennial period. The ratio of admission for enteric fever was fractionally higher than in the previous year and that for venereal diseases was lower. Cholera broke out about the middle of July in a village in Upper Egypt and spread to Cairo and Alexandria where it became epidemic among the civil population. Three cases occurred amongst the troops at Cairo with fatal results and there were two fatal cases amongst officers at Alexandria. The last case in Cairo occurred in November, but the disease still remained in Alexandria at the end of the year. Khartum was again used during a portion of the year as a station for British troops.

Some new charts for the various commands occupied by British troops in 1902 and four new abstracts have been prepared and added to the present volume. These besides being new strike us as an instructive and useful feature, the abstracts being calculated to carry out the intention of their compilers—namely, to facilitate the making of statistical comparisons and to unify the statistical details for the whole army at home and abroad.

We wish to call special attention to the extracts (p. 136 *et seq.*) from an exhaustive and admirable report of Lieutenant-Colonel W. G. Macpherson, C.M.G., R.A.M.C., which has been circulated as an official publication, on the sanitary conditions in South Africa and to the information and valuable remarks embodied in the report on the health of the European troops serving in India in regard to the causation of enteric fever in that country (pp. 201 and 205 *et seq.*) and to those on venereal disease (*vide* p. 233 *et seq.*).

At the end of the section of the Army Medical Report dealing with the health of the troops on board ship we find it noted that, according to returns received at headquarters, the number of invalids from the South African Field Force who returned to England during the year was 16 004 1 14 deaths occurred during the voyage home of the South African invalids are reserved records of the campaign

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[1] Army Medical Department Report for the year 1902. Vol. XLIV. London: Printed for His Majesty's Stationery Office by Harrison and Sons, St. Martin's-lane, printers in or[illegible] to be purchased, either directly or throug[illegible] and Spottiswoode, East Harding-street, [illegible] and Boyd, Edinburgh; or E. Ponsonby, [illegible] 1904. Price 1s. 9*d*.

MR CHAMBERLAIN AND PREVENTIVE MEDICINE

THE Royal Institute of Public Health gave a banquet on June 30th at the Criterion Restaurant London in honour of the Right Hon Joseph Chamberlain and in recognition of his services to preventive and tropical medicine whilst filling the office of Colonial Secretary from 1895 to 1903 The chair was taken by Dr W R Smith President of the Institute and amongst those present were the Right Hon A J Balfour the Duke of Northumberland the Duke of Marlborough, the Duke of Abercorn the Earl of Onslow Lord Strathcona, Lord Iveagh Mr A Lyttelton Sir Joseph Fayrer, Sir Patrick Manson, Surgeon General Sir Francis Lovell Sir William Broadbent Major Ronald Ross Professor T Clifford Allbutt, Mr J Cantlie Lieutenant Colonel R H Firth, R A M C Professor R Boyce Professor C S Sherrington, Mr W M Haffkine, and Dr J Mitchell Bruce

Before the usual loyal toasts were honoured the Honorary Fellowship of the Royal Institute of Public Health was bestowed upon Mr Balfour Lord Iveagh, and Mr Chamberlain

Dr SMITH, in proposing the health of the guest of the evening Mr Chamberlain said that they were deeply indebted to him for the great progress which it had been possible to make in various branches of research He then alluded to the services which Mr Chamberlain had rendered in regard to preventive medicine and when the speaker explained how through Mr Chamberlain s agency the London School of Tropical Medicine was founded the audience greeted the remark with prolonged cheering

When Mr CHAMBERLAIN rose to reply he was received with such an outburst of applause that he had to wait some considerable time before he commenced his speech in the course of which he said that as Secretary of State for the Colonies there was brought home to him, as there must be brought home to everyone who filled that position, the importance of caring for the health of those who were doing the work of the Empire across the seas He took advantage of the opportunities which his office gave and was able to secure some tangible expression of the interest which was universally felt in preventive medicine so as to give effect to the work of such institutions as the Royal Institute of Public Health He accepted the honour which was done him that evening because a gathering of the kind they saw before them, bringing together the experts in medical science and the statesmen and legislators who could give effect to their con but good cou nportance nterested has been made in medicine said that he did not know ent which had made Lord Lister s name a household word throughout the world and gained for him the gratitude of the human race was to be considered a triumph of surgery or of medicine but he did know that medical research assisted by surgical science, had in the last few years thrown a flood of light on the origin of disease and that certainly was the first step to the cure of disease He could not tell whether it would be possible greatly to extend the three score years and ten which was the Psalmist s limit of normal human life, but he hoped that their descendants might pass through their earthly course with less suffering and more vigour than their predecessors While they looked with confidence to the further results of curative medicine, he thought all would agree that preventive medicine was better still The importance of securing healthy conditions of life was recognised by everybody who cared for the welfare of his fellow creatures Without sanitary reform social reform was an empty phrase, preventable disease at that moment was a great agent for filling the workhouses raising the taxes, and weakening the fibre of the people In peace preventable disease was of the utmost importance in war it destroyed more soldiers than the bullets of the enemy, and meanwhile ure was lessened in efficiency which its agents were con the efforts of men like Sir Patrick Manson, Professor Ross Professor Haffkine and the others who had been devoting their time to tropical medicine and to research and to the causes of tropical diseases and their remedies that his attention and warmest sympathy were chiefly directed The work of the century was the consolidation of the Empire and wherever the British rule was established there they would find the Government officials dealing with every conceivable problem of education of trade of health and of the development of the countries given to their charge Those men were the great assets of the Empire, they must prize them and value them and do everything to keep them in the vigour of life and it was for that reason Mr Chamberlain said that he attached so much importance t studies and to the researches wl of time would make those tropic each in their turn the white man s grave places where white men could live in comfort Mr Chamberlain concluded by saying that that was the reason why one of those almost unknown students working in laboratories in London Liverpool and elsewhere might be doing more good for the Empire than any state man had been able to do however high his position

Mr BALFOUR in responding to the toast of Preventive Medicine and the State proposed by the Duke of NORTHUMBERLAND said that preventive medicine was concerned with the fact that the urban population was increasing relatively to the rural population which raised the problem whether the result would be some falling off from the ancestral vigour of the race The internal problem for preventive medicine was therefore to see that deterioration did not occur in the great accumulations of our population in the ever growing centres But there was the external problem for preventive medicine as to how they were going to develop the great tropical regions under British superintendence if the best of the men who were sent out were cut off in the prime of their existence The blood tribute hitherto exacted from the British race in the great tropical r impossible unless turn those great turned the great tropical colonies into places where the white man could live in reasonable health and comfort there would be added directly and indirectly incalculable gains to the prosperity of the British Empire

Mr CANTLIE the honorary secretary of the Institute in a witty speech proposed the toast of The Guests ' which was acknowledged by Lord ONSLOW

The Duke of MARLBOROUGH then proposed ' The Royal Institute of Public Health, which was replied to by Dr SMITH

THE MIDWIVES ACT, 1902.

THE members of the Central Midwives Board met on June 30th at 6 Suffolk street London S W , Dr F H CHAMPNEYS being in the chair

Under Section 3 of the Midwives Act it is laid down that one of the duties and powers of the Central Midwives Board is to appoint examiners and this matter came under the notice of the Board appearing on the agenda paper as the first item of business after the reading of the minutes of the last meeting

Dr C J CULLINGWORTH opened the discussion by proposing that a list of examiners both for London and the provinces should be prepared by the Central Midwives Board from those who were willing to serve and to act when required by the Board

Dr J WARD COUSINS at once raised the important point that by merely putting the words a list of examiners no restriction was placed upon the choice of examiners Dr Cousins did not waste any time but in a very few words made out a good case for the view that the examiners should be registered medical practitioners He urged that the Central Midwives Board ought to work so as to gain the confidence of the medical profession because it was through practitioners that the Board would have to work It was necessary therefore to secure the support of profession and to do that the Board must examiners must be qualified practitioners. There was also the further consideration that the subjects of the examination required medical men as examiners. Dr. Cousins therefore moved as an amendment—

> That the wording of the clause should be "a list of examiners who shall be registered medical practitioners."

Mr. E. PARKER YOUNG supported the amendment and said that it was a retrograde movement to suggest that the examiners might be other than registered medical practitioners. He very clearly brought out the weighty argument that the public demanded that the examiners under the Midwives Act should be highly qualified medical men commanding the esteem and confidence of the profession.

Miss WILSON took quite the opposite view. She said it was not a retrograde movement and her reasons were that a matron or a midwife would be a useful addition to the Board of Examiners because very few medical men undertook to teach details of nursing.

Dr. CULLINGWORTH thought that the examiners chosen would be for some time to come qualified medical men but considered that the Board should be left free to appoint, if it thought right, a trained midwife or matron as an examiner. He said he would not lend himself to the appointment of midwives as examiners straight away or without consideration but he contended that the Board ought to have the liberty to do so if it so wished.

The amendment restricting the examiners to qualified medical practitioners was, however, lost on being put to the vote and the Central Midwives Board is therefore now free to appoint anyone whom it chooses to select to the post of examiner. It is worth putting on record that Dr. W. J. SINCLAIR before recording his vote in favour of the amendment warned the Board that its duty was to make it clear to the medical profession and to all who wished to enter for the examinations that those examinations would be carried out by duly qualified medical practitioners, otherwise what was to prevent a highly-gifted chambermaid from being made an examiner? Dr. COUSINS also succeeded in sounding a note of warning before he gave his vote in favour of the amendment and no one at the Board seemed anxious or ready to answer his question as to how any woman trained or taught under the flimsy rules and regulations of the Midwives Act could possibly be considered properly qualified to undertake the duties of an examiner. There are few medical men who will not agree with Dr. Cousins that it would have given the profession great satisfaction if the Board had accepted the amendment and restricted the choice of examiners to properly qualified registered medical practitioners.

The first examination under the Midwives Act is to be held in May, 1905, and after that the examinations will take place twice a year in London and the provinces simultaneously on the same papers, or more often if necessary. The provincial centres are Bristol, Manchester, and Newcastle-on-Tyne. The arrangements and regulations referred to in the preceding lines were not arrived at until after a long and wearisome discussion in which the same arguments were often repeated involving much waste of time. Some members of the Board should remember that the mere repetition of an argument or opinion does not tend to strengthen it but if anything constant iteration may weaken its effect.

Among the directions to examiners the Board agreed to include one that directs the examination to consist of not fewer than six questions, the time allowed for answering to be three hours. The examinations are to consist of a written and an oral part and are to be conducted by not less than two examiners. In connexion with the question of the examination Miss R. PAGET asked if there should not be some laxity at first. "Surely," she said, "for the first examination you will not be too strict." Dr. CHAMPNEYS explained that it was necessary to start with a proper standard to which Miss PAGET replied, "Surely medical examinations began gently." Later this speaker further urged that laxity in the examinations was to be considered because the country was in need of midwives, but as Dr. SINCLAIR very rightly pointed out that amounted to an argument of pity, the practical effect of which would be that the country would be supplied with an inferior article.

After consideration of applications for certificates the names of 829 women were passed under Section 2 of the Act and ordered for entry on the roll, the total number enrolled being 6159.

Looking Back.

FROM

THE LANCET, *SATURDAY,* JULY 8, 1826.

Diseases of the Pancreas.[1]

Little need be said upon this subject because it is hardly possible to discover the existence of disease in this organ during life, so as to distinguish it with certainty from that of the neighbouring parts. That the pancreas is liable to inflammation, and that in various degrees, may be easily inferred from analogy. Such a state might be suspected from the occurrence of deep-seated pain in the epigastric region, increased upon pressure. If the organ were enlarged or hardened by the disease, it might perhaps be felt upon examination, at least in emaciated subjects. It would be very likely to disorder the functions of the stomach.

The accuracy of our diagnosis in such a case, would be of no great importance, as it would require only the common treatment of inflammation; which it is unnecessary therefore to again particularize.

FOREIGN DEPARTMENT.

THERAPEUTICS.

On the use of Belladonna as a Prophylactic in Scarlatina. (Rust's Magazin, fur die gesammte Heilkunde, xx vol. p. 182).

SEVERAL notices have been published of late, particularly in German journals, regarding the prophylactic virtues of the extract of belladonna in epidemics of scarlatina. The following experiments made at the orphan hospital of Langendorf in Prussia, by Dr. Randhahn, physikus of the place, is one of the strongest facts in favour of the alleged property. In one of the apartments of the hospital two children were attacked by scarlet fever, in February 1825, and 160 others were exposed to it. A solution of three grains of the extract of belladonna in an ounce of a vinous infusion of cinnamon, was given to each in small doses, during the whole month of February. Up to the 21st of April, when the report was made by the physician, not a single case had occurred among them, and even two who lived in the same chamber with those affected did not suffer.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

AN extraordinary Comitia was held on June 30th, Sir WILLIAM S. CHURCH, Bart., K.C.B., the President, being in the chair.

The PRESIDENT announced the following nominations to lectureships for 1905: Dr. W. C. Bosanquet as Goulstonian lecturer; Dr. W. H. Allchin as Lumleian lecturer; Dr. Norman Moore as FitzPatrick lecturer; Dr. Leonard E. Hill as Oliver-Sharpey lecturer; and Dr. W. H. R. Rivers as Croonian lecturer.

Licences to practise were granted to two candidates (Mr. Eric Gardner and Mr. George Alick Soltau).

Communications were received from: 1. The General Medical Council, containing resolutions of the Council with regard to preliminary scientific education and examination and rules with regard to diplomas in public health, both adopted in May last. This was referred to the committee of management. 2. The secretary of the Royal College of Surgeons of England, reporting certain proceedings of the Council on May 12th. This was received and entered on the minutes. 3. The same, reporting certain proceedings of the Council on June 9th, communicating also a report of a special committee on the question of instituting a diploma in tropical medicine and inviting this College to a conference on the subject. This was agreed to, the nomination of representatives being left to the President.

Reports were also received from the laboratories committee, the committee of management, and from the examiners for the Licence on the results of the examinations in April last.

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[1] Excerpt from Lecture No. XXXI. on the Theory and Practice of Physic delivered by Dr. Clutterbuck in the Theatre, General Dispensary, Aldersgate street.

It was agreed that the following institutions should be added to the list of [illegible] School and Highgate School. It was [illegible]

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 8643 births and 3953 deaths were registered during the week ending July 2nd. The annual rate of mortality in these towns, which had been 14·2, 13·8, and 13·2 per 1000 in the three preceding weeks, increased again last week to 13·5 per 1000. In London the death-rate was 12·9 per 1000, while it averaged 13·8 per 1000 in the 75 other large towns. The lowest death-rates in these towns were 5·1 in Tottenham, 6·1 in Leyton, 7·0 in Handsworth (Staffs.) and in King's Norton, 7·1 in Hornsey, 8·2 in Reading, 8·5 in East Ham, 8·6 in Northampton, and 8·7 in Newport (Mon.); while the highest rates were 17·7 in Liverpool and in Bootle, 18·1 in Hull, 19·0 in Manchester and in Newcastle-on-Tyne, 20·0 in Great Yarmouth, 20·3 in Huddersfield, 21·6 in Wigan, and 22·8 in Hanley. The 3953 deaths in these towns last week included 455 which were referred to the principal infectious diseases, against 492, 487, and 444 in the three preceding weeks; of these 455 deaths, 180 resulted from measles, 102 from whooping-cough, 82 from diarrhœa, 44 from diphtheria, 25 from scarlet fever, 16 from "fever" (principally enteric), and six from small-pox. No death from any of these diseases was registered last week in Willesden, Hastings, Southampton, Reading, Handsworth (Staffs.), Aston Manor, Bury, Rotherham, Tynemouth, or Newport (Mon.); while the highest death-[illegible]d in [illegible]otle, [illegible], and Rhondda. The [illegible]om measles occurred in [illegible] Liverpool, Bootle, Manche[illegible] Hull, and Rhondda; from [illegible] in Bootle; from diphtheria in Hanley, West Hartlepool, and Rhondda; and from whooping-cough in Great Yarmouth, Grimsby, and York. The mortality from "fever" and from diarrhœa showed no marked excess in any of the large towns. Of the six fatal cases of small-pox registered in these towns last week two belonged to Gateshead, two to Newcastle-on-Tyne, one to London, and one to Oldham. The number of small-pox patients under treatment in the Metropolitan Asylums Hospitals, which had been 95, 80, and 83 at the end of the three preceding weeks, had declined again to 74 at the end of last week; 10 new cases were admitted during the week, against 21, seven, and 16 in the three preceding weeks. The number of scarlet fever cases in these hospitals and in the London Fever Hospital on Saturday last, July 2nd, was 1631, against 1647, 1630, and 1629 on the three preceding Saturdays; 254 new cases were admitted during the week, against 193, 206, and 199 in the three preceding weeks. The deaths in London referred to pneumonia and diseases of the respiratory system, which had been 157, 142, and 141 in the three preceding weeks, rose again last week to 146, but were 19 below the number in the corresponding period of last year. The causes of 35, or 0·9 per cent., of the deaths registered in the 76 towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in West Ham, Bristol, Leicester, Nottingham, Salford, Leeds, Hull, Newcastle-on-Tyne, and in 54 other smaller towns; while the largest proportions of uncertified deaths were registered in Liverpool, Bootle, St. Helens, Manchester, Sunderland, and South Shields.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been 16·2, 17·0, and 15·9 per 1000 in the three preceding weeks, rose again to 16·3 per 1000 during the week ending July 2nd, and was 2·8 per 1000 in excess of the mean [illegible] large English t[illegible] ranged from 1[illegible] Aberdeen and [illegible]ch were referred to whooping-cough, [illegible] measles, four to scarlet fever, three [illegible] "fever," and two to small-pox. In all [illegible]m these [illegible] 66, and [illegible] weeks. These [illegible] deaths were [illegible] 2·3 per 1000, which was 0·7 per [illegible] last week from the same diseas[illegible] towns. The fatal cases of [illegible] been 21 and 27 in the two preceding weeks, further rose last week to 31, of which 14 were registered in Glasgow, eight in Edinburgh, four in Dundee, and four in Paisley. The deaths from diarrhœa, which had been 24, 20, and 22 in the three preceding weeks, declined again to 18 last week, and included eight in Glasgow, four in Aberdeen, and two in Dundee. The fatal cases of measles, which had been 16, 14, and 12 in the three preceding weeks, rose again last week to 14, of which five occurred in Edinburgh, four in Glasgow, two in Dundee, and two in Aberdeen. The deaths from scarlet fever, which had been two in each of the two preceding weeks, increased last week to four, all which were registered in Glasgow. The fatal cases of "fever," which had been two and four in the two preceding weeks, declined again to three last week and included two in Dundee. The deaths from small-pox, which had been three, three, and one in the preceding weeks, rose again last week to two, both of which belonged to Glasgow. The deaths referred to diseases of the respiratory organs in these towns, which had been 68, 93, and 64 in the three preceding weeks, rose again last week to 80 but were six below the number in the corresponding period of last year. The causes of 26, or nearly 5 per cent., of the deaths registered in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 18·3, 21·7, and 19·5 per 1000 in the three preceding weeks, further declined to 16·5 per 1000 during the week ending July 2nd. During the 13 weeks of the quarter ending on that date the death-rate has averaged 21·7 per 1000, the rates during the same period being 14·8 in London and 17·2 in Edinburgh. The 120 deaths of persons belonging to Dublin registered during the week under notice showed a decline of 22 from the number in the preceding week and included seven which were referred to the principal infectious diseases, against four, six, and three in the three preceding weeks; of these, two resulted from measles, two from scarlet fever, one from diphtheria, one from whooping-cough, and one from diarrhœa, but none from either small-pox, or "fever." These seven deaths were equal to an annual rate of 1·0 per 1000, the death-rates last week from the principal infectious diseases being 1·5 in London and 2·4 in Edinburgh. The 120 deaths in Dublin last week included 21 among children under one year of age and 29 among persons aged 60 years and upwards; the deaths of infants were slightly in excess of the number in the preceding week, while those of elderly persons showed a marked decline. Three inquest cases and three deaths from violence were registered; and 53, or more than two-fifths, of the deaths occurred in public institutions. The causes of four, or more than 3 per cent., of the deaths registered in Dublin last week were not certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified: Staff Surgeon: H. Huskinson to the *Vivid* for Pembroke Dockyard (dated June 22nd). Surgeon: A. T. Wysard to the *Albion* as Interpreter in German.

ROYAL ARMY MEDICAL CORPS.

Lieutenant G. F. Rugg, Lieutenant J. Fairbairn, Lieutenant J. A. Turnbull, Lieutenant R. B. Hole, Lieutenant M. F. Grant, Lieutenant H. Harding, and Lieutenant A. A. Meaden proceed to Woolwich for duty

Major J. R. Mallins, on arrival home from Halifax, N.S., has been posted to Portsmouth for duty. Lieutenant F. M. M. Ommanney has been appointed medical officer with the 6th (Somaliland) Battalion Royal African Rifles.

Lieutenant-Colonel A. P. O'Connor, C.B., now at Gibraltar, has been appointed Principal Medical Officer, 3rd Division, First Army Corps.

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Major F. K. Pigott to be Surgeon-Lieutenant-Colonel (dated June 21st, 1904). Brigade-Surgeon-Lieutenant-Colonel W. P. Whitcombe, Worcester and Warwick Volunteer Infantry Brigade, to be Surgeon-Major (dated July 6th, 1904). Surgeon-Lieutenant L. A. Avery, Suffolk Imperial Yeomanry, to be Surgeon-Lieutenant (dated July 6th, 1904). Surgeon-Major E. J. Hunter to be Surgeon-Lieutenant-Colonel (dated June 14th, 1904).

ROYAL ARMY MEDICAL CORPS (MILITIA).

Captain J. E. O'Connor resigns his commission (dated July 2nd, 1904). Supernumerary Lieutenant S. G. McAllum to be Captain (dated June 4th, 1904).

IMPERIAL YEOMANRY.

South of Ireland: The appointment of Surgeon-Lieutenant F. F. MacCabe bears date July 30th, 1903.

VOLUNTEER CORPS.

Rifle: 2nd Volunteer Battalion the Highland Light Infantry: Surgeon-Captain W. Sandeman to be Surgeon-Major (dated July 2nd, 1904).

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).

The Aberdeen Company: Major J. MacK. Booth resigns his commission with permission to retain his rank and to wear the prescribed uniform (dated July 2nd, 1904).

THE ARMY APPEAL BOARD.

Mr. Arnold-Forster has informed Captain Norton that after every medical examination of candidates for commissions in the army numerous representations are made on behalf of those rejected, supported by medical certificates. It was therefore considered expedient to institute an Appeal Board the decision of which should be final. The number of candidates examined since its inception is 234 and the cost of public money spent in fees has been £982 16*s*. The Army Council does not propose to abolish the Board at present but the matter is one of importance and is receiving consideration.

THE WAR IN THE FAR EAST.

Owing to the advent of torrential rains, the topographical difficulties of the country, which have been thereby greatly increased, and the possible insufficiency of land transport there has been a comparative lull in the military operations in the Far East. There has consequently been but little to record during the past week, the latest news being the reported repulse of the Russian attack on Mo-tien-ling Pass. From the side of the sea we learn that a portion of the Vladivostock fleet made an unimportant raid outside and again escaped Admiral Kanimura's squadron. As regards Port Arthur, its land investment seems to be complete but whether its capture by assault will be soon attempted or not we do not yet know for certain. The general line of the Japanese army may be described as extending diagonally from south-west to north-east along the line of railway to Mukden. The report of the Japanese having abandoned the Taling Pass proves to be unfounded. A Reuter's telegram emanating from General Kuropatkin's headquarters states that the Japanese have at length occupied the Mo-tien-ling Pass without opposition, much to the surprise of the foreign attachés who were amazed at seeing three formidable lines of earthworks abandoned without even a show of resistance. This abandonment was, as suggested, no doubt due to fears on the part of the Russians for their line of retreat. The dominating part which the Japanese artillery has played throughout the war and the skill with which it has been handled have been freely acknowledged by the Russians. Considering the heavy rains and the sodden condition of the soil the unfortunate soldiers in the "field" on both sides have been subjected to considerable exposure and hardship which must, we should think, be telling gravely upon their health and efficiency; of this we hear but little, however, at present. We learn from Russian sources that much cholera prevails among the Japanese troops but of the truth of this we are somewhat sceptical. That the amount of inefficiency attributable to sickness among the troops in the field is considerable cannot be doubted and it is most probably largely in excess of the loss occasioned by wounds in fighting. It will be remembered that the Russians recently brought some serious charges of cruelty against the Japanese which the latter have since not only indignantly repudiated but have advanced counter-charges of the treatment which their wounded had met with at the hands of the Russians, in spite of which the Russian wounded picked up by the Japanese had, they allege, been kindly treated. Criminations and recriminations of this nature are usually found to be barren of any good purpose; when the facts are carefully investigated they generally turn out to have been either exceptional, exaggerated, or even without any foundation. Those of our readers who are interested in the organisation of the Japanese army and its medical corps should consult an article on "Japan at War" by Colonel E. Emerson in the *Contemporary Review* for the present month for a brief account thereof, and as regards the medical services in the Russian army (peace) we may direct attention to a paper by Lieutenant-Colonel J. Hickman, R.A.M.C. (retired pay), in the *Journal of the Royal Army Medical Corps* for July.

The *Sphere* of July 2nd contains some excellent reproductions of photographs relating to medical matters in connexion with the war. There is a panoramic view of the hospital court-yard crowded with Japanese wounded at Antung immediately after the Yalu battle, stretcher-bearers carrying a wounded Russian, and a representation of a Japanese field hospital with operation table, operator, and assistants. Portraits of the medical men and nurses of the Russian Society of St. George are also given together with an illustration of a Russian hospital equipment on the shores of Lake Baikal.

In the wagon-building shops of the Kasan Railway the fitting up of the wagons for the circulating laboratory and room for live animals, such as guinea-pigs, is proceeding actively. Accommodation for the staff and disinfecting rooms is afforded in separate wagons. The specific object of this train is to combat infectious disease. In the same workshop there is in course of preparation a train to carry ice-making machinery and ice safes, with the necessary apparatus and accessories, all to go forward to the seat of war when ready, which will be in a few days. The *Novosti* announces that at the military medical factory the fitting up of the interior of the chemico-bacteriological laboratory is almost finished. The laboratory will be devoted to testing muslin, wool, textiles, and other materials entering into the preparation of antiseptic bandaging which the factory supplies to the whole army.

LEPER CAMPS IN RUSSIA.

The Military Medical Executive has undertaken the construction of a series of leper camps in the Don, Kouban, and Tver districts to deal with the disease in the respective localities.

Correspondence.

"Audi alteram partem."

THE APPEARANCE OF BACTERIA IN NORMAL ORGANS AND THE SIGNIFICANCE THEREOF.

To the Editors of THE LANCET.

SIRS,—That the blood of healthy animals possesses (1) marked bactericidal properties and (2) that the internal organs of healthy animals are free from living germs have long been cardinal tenets of modern bacteriology. These views owed their origin to the work and writings of Pasteur, Lister, Duclaux, and others. Still from the time of their first enunciation up to the present day doubts have ever and anon arisen as to the correctness of the latter conclusion and a long series of experiments and observations have been made by numerous investigators bearing upon this all important question. The last of these investigations appears in your columns for July 2nd, p. 21, in which the writer, Mr. H. de R. Morgan, details the results of careful work carried on in the Lister Institute upon the organs of different animals dealt with in ways which he fully describes. He considers himself entitled to come to the following conclusions "1 That normal organs do not contain pathogenic bacteria 2 That the presence of non pathogenic organisms in the cultures is probably due to accidental contamination He thinks, in fact that in spite of all the precautions taken common organisms from the air had 'fallen on the surface of the organs during some part of the manipulations

His experiments were made in consequence of a previous careful and elaborate investigation made by W W Ford[1] of Montreal, carried out in the laboratory of Professor Adami Ford came to the conclusion that at least 70 per cent of the internal organs of our ordinary domesticated animals contain bacteria which are capable of development provided a sufficient time be allowed to elapse between the removal of the organs and then final examination Ford felt positive that in his experiments, owing to the great care taken bacteria were not introduced from without by careless manipulation of instruments or media And the fact should not be lost sight of that many years ago a similar conclusion was arrived at by the present distinguished president of the Pathological Society of London Writing in 1878[2] Sir J Burdon Sanderson after detailing his own investigations conducted with every precaution, spoke as follows ' Under the conditions I have described to you it seems to me quite impossible to suppose

to the organ from the out

by the organ in its transit

o the brain could escape

destruction If therefore bacteria be found they or their germs *must have been there before the organ was plunged into the hot liquid*[3] The result of all the experiments whether with liver or kidneys was the same The soft red kernel of uncooked tissue at the middle of the organ always contained bacteria the vigorous development of which was indicated

and active movement

conclusive Seeing

obtained by other workers previous to 1878 it is not a little remarkable that Morgan should have been content to assume that mere surface contamination could have accounted for his numerous positive results Even if he had ignored or been unaware of these earlier investigations there was the statement of Ford before him that bacteria were found on microscopical examination in the interior of various of the organs dealt with

The experiments of Burdon Sanderson do not seem open to question The method employed by him of dropping the organs into superheated paraffin seems indeed likely to lead (as it did) to more uniform results than the method employed by Morgan and Ford The former says the organs were ' quickly passed through the flame of a Bunsen burner while the latter is rather more explicit and says that the organs were "cooked in the flame until the surface had been thoroughly scorched to a greyish brown colour Internal portions of the organs may have been at times too much cooked' by such a process and this may have led to the absence of organisms in a varying percentage of their experiments Where organs of some size are used another method employed by some experimenters is I think also thoroughly trustworthy for getting rid of all surface contamination and yet very simple I mean the dropping of the organs for a certain number of hours into a 2 per cent solution of chromic acid so that the acid may penetrate and colour the whole external portions of the organs for a depth of about one fourth of an inch After four hours or so the protected organ may be transferred to a closed sterilised vessel and submitted to incubating heat for a number of days varying according to the temperature employed Subsequently the red unstained tissue in the central parts of the organs will be found to swarm with bacteria

The fact that bacteria can thus be made to appear in swarms in normal organs has been thoroughly proved There is no more room for doubting it now than there was when Burdon Sanderson wrote in 1878 The question of *the interpretation of such results* is doubtless one of great difficulty to many and will never be solved till investigators are willing to look *all* the facts in the face with minds perfectly open and ready to draw the most warranted conclusions—irrespective of all antecedent notions It seems necessary to make so trite a statement because there is in the minds of most

bacteria cannot

based upon the

the consequent

they can arise by archebiosis The question of the *de novo* origin of bacteria by heterogenesis seems never to be seriously considered by bacteriologists They for the most part persistently ignore such a possibility

We find ourselves however in this position Bacteria have been shown to be capable of appearing in the organs of healthy animals notwithstanding all early beliefs to the contrary But unless we can conclude that bacteria must be capable of arising *de novo* in the cells of such organs after the death of the animal to which they belonged their discovery in such situations would be in flagrant contradiction with the two doctrines which I have referred to at the commencement of this letter as cardinal tenets of modern bacteriology Their presence would tend to stultify the doctrines and work of Lister and all the beneficent life giving results which have followed therefrom How ludicrous would be all the talk and work concerning the production of asepsis if all internal organs and tissues are *during life* permeated by germs of micro organisms Do not the modern results of the work of skilled surgeons in all civilised countries tend to show that no such permeation exists ? Organisms in abundance obtain entry to the alimentary tract and to the air passages but how are they to be disseminated to all the organs and tissues of the body if the blood is endowed with the bactericidal qualities which it is commonly said to possess ? The supposed existence of such an endowment would be shown to be an error if bacteria could be proved to exist *during life* in the organs of healthy animals as some would have us believe

The only other means (apart from the agency of blood vessels and lymphatics) of accounting for the dissemination of bacteria through the body is the supposition which was favoured in 1878 by Burdon Sanderson—namely that they are even in healthy animals capable of passing through the walls of the alimentary canal and thereafter wandering into this or that contiguous organ such as the spleen, the liver, or the kidney Apart from the fact that such a supposition (at the time supported by no independent evidence) is at variance with the more recent work of Opitz and Welch it in no way suffices to explain existing difficulties It is certain for instance that recognisable bacteria are not to be found in such organs of healthy animals immediately after death It is further known that when later they do appear they show themselves first as mere minute motionless particles which subsequently take on typical bacterial forms *But in the germ stage all these organisms are motionless* How can it be supposed therefore that such motionless germs can make their way not only through the intestinal canal but into this or that abdominal organ and even into all the individual cells of such an organ ? In proof that they may be so found I have shown[4] what occurs when a healthy sheep's kidney is treated in the manner I have indicated by soaking first in 2 per cent chromic acid and then transferred to a sterilised vessel at about 25° C for three or four days In such an organ every section revealed inside the area which had been affected by the chromic acid that almost every cell within the renal tubules was full of developing or actually developed bacteria The former appeared as mere cocci like particles which had taken the stain like the developed bacteria—both being situated in the midst of cell granules comparatively unstained (Photographs that are given of the sections show the distribution of the bacteria to be as above indicated)

Such facts seem incapable of receiving any rational explanation apart from the conclusion that the organisms found had arisen *de novo* after death in the previously healthy organs Their appearance within almost every epithelial cell of the kidney is just what might be expected if they had taken their origin there by heterogenesis What stands in the way of such a conclusion ? A preconception—nothing more On the other hand, apart from heterogenesis the presence of bacteria in such organs could only be accounted for by one or other of the two suppositions to which I have referred Either (1) by the self contradictory notion that

passing through the intestinal

us or that organ there to re

, or (2) by the admission that

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[1] Journal of Hygiene vol 1 1901 p 277

[2] Brit. Med Jour vol 1 p 119

[3] Italics not in the original It will be seen that there are grave reasons for doubting the validity of this view

[4] Studies in Heterogenesis 1904 pp 303-312

all that has been said concerning the bactericidal properties of the blood has been a false and mistaken notion. Either of these attempted explanations would, moreover, be equally at variance with the doctrines of Lister and the beneficent practice which he initiated. Such suppositions are, in fact, condemned by the life-saving results of his practice. Had either of the above attempted explanations of the fact that bacteria can be made to appear at will within the tissue elements of previously healthy organs been true—explanations, that is, which suppose that such organisms or their germs exist as such during life in the organs of healthy animals—then, as I have already indicated, the efforts to procure asepsis, as now practised by surgeons all over the civilised world, would be solemn but unreasoning mockeries and nothing else.—I am, Sirs, yours faithfully,

H. CHARLTON BASTIAN.

Manchester square, W., July 4th, 1904.

IN THE MATTER OF THE TAMWORTH TOWN COUNCIL.

To the Editors of THE LANCET.

SIRS,—My attention has just been drawn to some remarks you make in your issue of June 18th relative to the Tamworth town council and its medical officer's report. Perhaps you will permit me to say that your remarks show that the information you have received, and upon which you have based your remarks, is *absolutely incorrect* and *misleading*, and has no doubt been supplied to you from some "official" source with the view of using *your* weighty *opinion* to bolster up the official's cause. At the time I moved the resolution in the council—"That the medical officer's report be submitted to the chairman of the sanitary committee before being printed"—I had no wish, as I explained to the council at the time, to in any way *revise* or *alter* the report *and the medical officer has never been asked by the council or the mayor* to *omit* anything from his report. The chairman of the sanitary committee, I believe, did suggest some alteration in the manner or the language in which the doctor had expressed his views on some very minor matter but no attempt whatever was made, as you suggest, to get the doctor to alter or omit anything from his report that would in any way conceal anything from the Local Government Board or county council; in fact, the present Mayor of Tamworth and his friends on the council will be very glad if the medical officer of health will wake up a bit and send in his reports at the proper time and not three or four months after date and after repeated requests for the same from the authorities you quote; also they will be grateful to him if he will show up all the weak spots in the *sanitary state* of the town and not devote so much space in his reports to ornithological essays, &c. The present Mayor of Tamworth and his friends are [illegible] in their power to push on with a [illegible] reform, *including* an up-to-date system of sewerage and sewage disposal. Perhaps you will also permit me, too, to suggest to you the [illegible] ing that any information sent to [illegible] correct before you proceed to critic[illegible] the Tamworth town council or its [illegible] people know more about Tamworth's requirements than does the Editor of THE LANCET and also they know who are the most likely men to study their interests. They also know that if any apology is due to anyone it is due from the doctor to the sanitary committ[illegible] unnecessary manner in which [illegible] would like just to say that the r[illegible] support of the majority of the [illegible] in his praiseworthy efforts to rescue [illegible] the hands of the "officials" who for the [illegible] exercised, their ingenuity in looking after number one with the most baneful effect on the public spirit of the town. The present mayor, by his gr[illegible] strict economy, has been able [illegible] orough in three years from 8s. [illegible] 6s. 5*d*. without sacrificing [illegible] possible to [illegible] other greatly-needed measures of reform.

I am, Sirs, yours faithfully,

T. B. ALLKINS.

Hill Crest, Tamworth.

*** We received this letter last week too late for insertion. We publish it in spite of its futility. Our article, stated by Mr. Allkins with genial observance of the ordinary courtesies of life to be "absolutely incorrect and misleading," pointed out that it was well that the medical officer of health of Tamworth had obeyed the law and submitted his report to the Local Government Board instead of allowing it to be supervised by the Tamworth town council. In consecutive sentences Mr. Allkins says (1) that he moved for the medical officer's report to be submitted to the chairman of the sanitary committee before being printed, having no wish that the report should be revised and altered; and (2) that the chairman of the sanitary committee suggested alterations. It seems to us that those alterations would probably have been made if the wrongful opportunity had been given. The present mayor of Tamworth and his friends may have all the admirable sanitary intentions with which Mr. Allkins credits them (presumably Mr. Allkins is one of the friends), but this will not alter the fact that the public health of this country has to be carried out by the people appointed under the Acts of Parliament and in accordance with those Acts. A well-intentioned mayor is not necessarily an expert sanitarian and to be the friend of a mayor is not to be in possession of a diploma in public health. We could not have desired a fuller confirmation of the correctness and accuracy of our views, when dealing with the situation at Tamworth, than Mr. Allkins supplies.—ED. L.

THE SILICO-FLUORIDES IN OTORRHŒA.

To the Editors of THE LANCET.

SIRS,—A few weeks ago you kindly published a letter in which I brought forward the value of otectomy and the silico-fluorides in the treatment of otorrhœa. In the interests of my crusade against the lamentable ignorance so often exhibited in regard to this disease I may perhaps be allowed to allude to three cases that illustrate the dangers that threaten the unchecked course of suppurative otitis. They were admitted to the Coventry Hospital at the beginning of last week. Case 1, aged four years, who had been under occasional medical treatment for otorrhœa, was sent in for meningitis. The child was in a semi-comatose condition with a high temperature. A slight discharge came from the right ear and from a sinus behind the ear. The temporo-sphenoidal lobe was searched without much result. The bone exposed was greenish in hue. The child died on the third day. Case 2, aged 12 years, had been under medical care for three years for a "running ear." There had been intense pain, but the case was not sent [illegible] there were rather alarming symptoms. The [illegible] was about 103° F. and the child looked very [illegible] There was a sinus behind the ear. Otectomy was performed and the antrum was opened, diseased bone being removed. The case is now doing well. Case 3, aged seven years, was sent in for otorrhœa. This middle ear was full of growths, the discharge being foul—a dangerous condition from which the patient was relieved by otectomy and is doing well.

I ask, Sirs, if the above cases admitted at a small hospital within a few hours of each other do not justify a protest against the prevailing indifference with regard to "running ears." Almost every week I see cases that bear witness to neglect or inefficient treatment. Yet it is certain that such cases can almost always be cured by proper treatment.

I am, Sirs, yours faithfully,

F. FAULDER WHITE.

Coventry, July 1st, 1904.

THE AGGLUTINATION REACTION IN TYPHOID FEVER.

To the Editors of THE LANCET.

SIRS,—I should be much obliged if any of your readers [illegible] e whether they have ever observed such a [illegible] of the [illegible] describe. [illegible] two [illegible] disease, which clinically resem[illegible] a most remarkable effect on an emulsion of active typhoid bacilli. When the serum was added to the bacilli in the proportion of 1–20 they were found to become much more actively motile. In fact, I have never seen such an extreme degree of motility a

occurred in these reactions. I have employed the agglutination reaction with various micro-[illegible]
cases both in man and animals
such a condition in the cases a
not seen it recorded i[illegible]

I am,

July 6th, 1904.

PROPOSED TESTIMONIAL TO DR. EYRE.

To the Editors of THE LANCET.

SIRS,—In August, 1903, Dr J. Eyre was investigating some points in the biology of the micro-organism of Malta fever in the bacteriological laboratory at Guy's Hospital when he accidentally inoculated himself with this micro-organism. A few days afterwards he developed an attack of Malta fever, causing incapacity for work for six weeks. As he was insured in a company against accidents and several diseases, including septicæmia, he made a claim under his policy. As he had been given to understand by the agent who induced him to take out the policy that it included accidental bacterial infections, contracted in his laboratory, he was astonished to find his claim repudiated. Acting on the advice of counsel Dr. Eyre insisted on his claim, and the dispute, owing to a clause of the policy, had to be decided, not publicly in court but by private arbitration. The decision of the arbitrator was in favour of the company. This decision is, I think, one of great importance to members of the medical profession who hold accident policies. Dr. Eyre's costs for the arbitration amount to some £140 and it is thought by many of his friends, amongst whom I count myself, to be a fitting opportunity to present him with a testimonial in order to assist him in meeting these costs. Cheques may be sent addressed to me at Guy's Hospital.

I am, Sirs, yours faithfully,
J. H. BRYANT.

Mansfield street, Portland-place, W., July 7th, 1904.

*** Dr. Bryant incloses a list of subscribers of sums varying between £3 3*s.* and 10*s.* 6*d.*, showing that the medical profession are recognising the hardship which Dr. Eyre has undergone. The circumstances will be found in detail in THE LANCET of June 25th, p. 1811. We shall publish the list of subscribers next week —ED. L.

ACCIDENTAL VACCINIA OF THE NASAL CAVITY.

To the Editors of THE LANCET.

SIRS,—Mr. W. H. Bowen's account of a case of the above in THE LANCET of July 2nd, p. 20, exactly describes a case I had some years ago, except that in my case I found a well-marked vesicle inside the ala nasi. Shortly afterwards I had a similar case in which the vesicle appeared on the lower lip. Both were women and no trouble ensued.

I am, Sirs, yours faithfully,
Stonebroom, Alfreton, July 5th, 1904. R. M. H. WALFORD.

IN THE MATTER OF PATENT MEDICINES.

To the Editors of THE LANCET.

SIRS,—I should be greatly obliged if you could give an authoritative answer to the following questions. May a medical man if he knows the composition of any *patented* proprietary article prescribe its exact formula so as to have it made up as an ordinary prescription or is a hospital dispenser legally entitled to make up any proprietary article of which he can discover the formula or composition? If the general answer to these two is in the affirmative would the answer also be in the affirmative if the article in question could only be made by special patented *process?*

I am, Sirs, yours faithfully,
July 4th, 1904. INQUIRER.

VACCINATION GRANTS.—Mr. J. D. Staple, public vaccinator of the Ashley district of the Bristol union, has been awarded the Local Government Board grant for successful vaccination for the fourth consecutive year.—Dr. A. W. Woodman Dowding has obtained the grant for successful vaccinations in the St. Newlyn East district of Cornwall.

THE INTERNATIONAL HEALTH OFFICE.

PROGRESS AND MODIFICATION OF THE PROJECT.

(BY OUR SPECIAL SANITARY COMMISSIONER.)

Paris, July 4th.

AT the last official International Sanitary Conference which met off and on in Paris from Oct. 10th to Dec. 3rd, 1903, a resolution was adopted in favour of constituting a permanent International Sanitary Office. This proposal, as related at the time, was not unanimously approved and the representatives of the British Government notably made some reservations. Since then there has been time for reflection, for a further exchange of views, and for a better understanding of the project. The idea has been ripening and within the last few days a distinct step forward has been taken. On the other hand, there has been no undue haste. For more than half a century various governments of Europe have held international conferences on sanitary matters. There have been in all 11 such official gatherings and it cannot be said that they have overburdened the world with proposals, schemes, and projects of legislation. The first conference met at Paris in 1851 and 12 nations were represented, the last conference met in 1903, also at Paris, but there were no less than 24 nations and governments represented The earlier conferences were more like scientific gatherings. The governments were represented by diplomatists who held a sort of watching brief while men of science discussed. Motions were carried and pious wishes were expressed. This sort of platonic procedure prevailed at the conferences held in 1851 at Paris, in 1859 at Paris, in 1866 at Constantinople, in 1874 at Vienna, in 1881 at Washington, and in 1885 at Rome. At Vienna in 1892 a considerable change took place. Europe was then menaced with the cholera and now the representations of the various governments began to take action. Conventions were signed and the conference met again the next year at Dresden and again, the year following (1894) at Paris. Later, in 1897, the tenth International Official Conference was held at Venice and this time for the purpose of drawing up an international convention in regard to the precautions which were to be taken to prevent the spread of plague. Thus out of 11 conferences only the last five have resulted in the signing of international treaties and agreements. It may be said that, while the first conferences met to discuss theories and to study sanitary problems this task has of late years been relegated entirely to the international medical and sanitary congresses. The official conferences, therefore, now meet, not to discuss theories, but to legislate; the debates relate to the regulations that it may be thought wise and possible to impose and to the international conventions that are necessary for such purpose So far the object of such understanding was to prevent the spread of disease from one nation to another while at the same time striving to reduce the inconvenience of such precautions, notably of quarantines, to the lowest possible degree.

These various agreements were grouped together and codified at the conference held in Paris last year. The new convention thus drawn up, which codifies and ratifies all the prev[illegible] 3rd, 1903, and is divi[illegible] or articles. But this [illegible]ly codifies, it also modifies the measures to be taken so as to bring them in harmony with the more recent discoveries of science. For instance, it is now believed that the period of incubation for plague is only five days, so that the period of observation of the passengers coming from a ship where there has been cases of plague on board has been reduced from ten to five days. Also it is now no longer necessary in such a case to retain the passengers in quarantine for these five days: they can be allowed to proceed if they are going to a place where there is a competent sanitary administration which can keep them under efficient observation. Then, again, according to the Venice Convention, every government had to notify to all the governments which had signed the convention whenever a case of plague occurred. *But if this case came from abroad and the disease did not spread to inhabitants of the country then it was not necessary to take any measures against the district in question.* In practice many authorities failed to notify the first case and only all that has been said concerni [illegible] perties of the blood has been [illegible] notion. Either of these attempted [illegible] over, be equally at variance with [illegible] the beneficent practice which he initiated. Such suppositions are, in fact, condemned by the life-saving results of his practice. Had either of the above attempted explanations of the fact that bacteria can be made to appear at will within the tissue elements of previously healthy organs been true—explanations, that is, which suppose that such organisms or their germs exist as such during life in the organs of healthy animals—then, as I have already indicated, the efforts to procure asepsis, as now practised by surgeons all over the civilised world, would be solemn but unreasoning mockeries and nothing else.—I am, Sirs, yours faithfully,

H. CHARLTON BASTIAN.

Manchester square, W., July 4th, 1904.

IN THE MATTER OF THE TAMWORTH TOWN COUNCIL.

To the Editors of THE LANCET.

SIRS,—My attention has just been drawn to some remarks you make in your issue of June 18th relative to the Tamworth town council and its medical officer's report. Perhaps you will permit me to say that your remarks show that the information you have received, and upon which you have based your remarks, is *absolutely incorrect* and *misleading*, and has no doubt been supplied to you from some "official" source with the view of using *your* weighty *opinion* to bolster up the official's cause. At the time I moved the resolution in the council—"That the medical officer's report be submitted to the chairman of the sanitary committee before being printed"—I had no wish, as I explained to the council at the time, to in any way *revise* or *alter* the report *and the medical officer has never been asked by the council or the mayor* to *omit* anything from his report. The chairman of the sanitary committee, I believe, did suggest some alteration in the manner or the language in which the doctor had expressed his views on some very minor matter but no attempt whatever was made, as you suggest, to get the doctor to alter or omit anything from his report that would in any way conceal anything from the Local Government Board or county council; in fact, the present Mayor of Tamworth and his friends on the council will be very glad if the medical officer of health will wake up a bit and send in his reports at the proper time and not three or four months after date and after repeated requests for the same from the authorities you quote; also they will be grateful to him if he will show up all the weak spots in the *sanitary state* of the town and not devote so much space in his reports to ornithological essays, &c. The present Mayor of Tamworth and his friends are doing, and intend to do, all in their power to push on with a thorough policy of sanitary reform including an up-to-date system of sewerage and sewage disposal. Perhaps you will also permit me, too, to suggest to you the advisability of ascertaining that any information sent to you from Tamworth is correct before you proceed to criticise adversely the doings of the Tamworth town council or its mayor. The Tamworth people know more about Tamworth's requirements than does the Editor of THE LANCET and also they know who are the most likely men to study their interests. They also know that if any apology is due to anyone it is due from the doctor to the sanitary committee for the wanton and unnecessary manner in which he insulted it. Finally, I would like just to say that the mayor of Tamworth has the support of the majority of the ratepayers of the borough in his praiseworthy efforts to re [illegible] the hands of the "officials" who f [illegible] exercised their ingenuity in looking after number one with the most baneful effect on the public spirit of the town. The present mayor, by his great administrative ability and strict economy, has been able to reduce the rates of the borough in three years from 8*s*. 1*d*. in the pound to about 6*s*. 5*d*. without sacrificing efficie [illegible] thus making it possible to carry [illegible] sposal and many other greatly-needed measures of reform.

I am, Sirs, yours faithfully,

Hill Crest, Tamworth. T. B. [illegible]

*** We received th [illegible] We publish it in spit [illegible] Mr. Allkins with genial observance of the ordinary courtesies of life to be "absolutely incorrect and misleading," pointed out that it was well that the medical officer of health of Tamworth had obeyed the law and submitted his report to the Local Government Board instead of allowing it to be supervised by the Tamworth town council. In consecutive sentences Mr. Allkins says (1) that he moved for the medical officer's report to be submitted to the chairman of the sanitary committee before being printed, having no wish that the report should be revised and altered; and (2) that the chairman of the sanitary committee suggested alterations. It seems to us that those alterations would probably have been made if the wrongful opportunity had been given. The present mayor of Tamworth and his friends may have all the admirable sanitary intentions with which Mr. Allkins credits them (presumably Mr. Allkins is one of the friends), but this will not alter the fact that the public health of this country has to be carried out by the people appointed under the Acts of Parliament and in accordance with those Acts. A well-intentioned mayor is not necessarily an expert sanitarian and to be the friend of a mayor is not to be in possession of a diploma in public health. We could not have desired a fuller confirmation of the correctness and accuracy of our views, when dealing with the situation at Tamworth, than Mr. Allkins supplies.—ED. L.

THE SILICO-FLUORIDES IN OTORRHŒA.

To the Editors of THE LANCET.

SIRS,—A few weeks ago you kindly published a letter in which I brought forward the value of otectomy and the silico-fluorides in the treatment of otorrhœa. In the interests of my crusade against the lamentable ignorance so often exhibited in regard to this disease I may perhaps be allowed to allude to three cases that illustrate the dangers that threaten the unchecked course of suppurative otitis. They were admitted to the Coventry Hospital at the beginning of last week. Case 1, aged four years, who had been under occasional medical treatment for otorrhœa, was sent in for meningitis. The child was in a semi-comatose condition with a high temperature. A slight discharge came from the right ear and from a sinus behind the ear. The temporo-sphenoidal lobe was searched without much result. The bone exposed was greenish in hue. The child died on the third day. Case 2, aged 12 years, had been under medical care for three years for a "running ear." There had been intense pain, but the case was not sent to us until there were rather alarming symptoms. The temperature was about 103° F. and the child looked very ill indeed. There was a sinus behind the ear. Otectomy was performed and the antrum was opened, diseased bone being removed. The case is now doing well. Case 3, aged seven years, was sent in for otorrhœa. This middle ear was full of growths, the discharge being foul— [illegible] from which the patient was relieved by [illegible] well.

I ask, Sirs, if the above cases admitted at a small hospital within a few hours of each other do not justify a protest against the prevailing indifference with regard to "running ears." Almost every week I see cases that bear witness to neglect or inefficient treatment. Yet it is certain that such cases can almost always be cured by proper treatment.

I am, Sirs, yours faithfully,

Coventry, July 1st, 1904. F. FAULDER WHITE.

THE AGGLUTINATION REACTION IN TYPHOID FEVER.

To the Editors of THE LANCET.

SIRS,—I should be much obliged if any of your readers could inform me whether they have ever observed such a peculiar feature of the reaction as I am about to describe. The serum from two [illegible] from some disease, which clinically resem [illegible] produced a most [illegible] effect on an emulsion of active typhoid bacilli. [illegible] erum was ac [illegible] ey were found t [illegible] I have never seen such an extreme degree [illegible] necessary promptitude even were it desirable that it should take such a service in hand The consuls will continue to inform their respective countries when anything which they consider to be dangerous occurs in the towns where they are stationed But the International Health Office will collect such information as will enable the governments to know better how to act when they receive warnings from their consuls As it is the rules laid down in the conventions are the same for all countries and this greatly to the disadvantage of Great Britain For instance if a ship arrives from Glasgow, London or Liverpool and there have been one or two cases of plague in these ports the same precautions can be enforced against such a ship as if it were a Turkish vessel coming from a port in the Levant where there is no sanitation whatsoever and where a violent epidemic of plague prevails

The object of the International Health Office is not merely to collect statistics It will seek to gather information in regard to all sanitary legislation and measures Thus the difference between London Liverpool and Levantine ports will be rendered evident to all whose business it is to study such matters and consequently it will be possible to differentiate in the treatment of vessels according to whether they come from countries where there is good or bad sanitation In such comparisons the advantage will be altogether on the side of Great Britain The same may be said in regard to such sanitary legislation as the Factory Acts the Ten Hours Bill and so on The object is to prevent the hindrance of sanitary legislation by the fear of foreign trade competition

All these matters having now been gone over thoroughly and all groundless fears it is hoped finally removed a new text for the project has been drawn up This is so worded as to prevent the possibility of the exchange of pin pricks between the nations concerned The modifications in the text have been introduced so as to remove all opportunity of unfair advantage being taken in regard to notifications of disease Therefore clean countries with adequate statistics will run no risk of being punished because they have instituted the compulsory notification of disease There is besides *no compulsion about the scheme The governments* will only supply what information they deem it advisable to supply Nevertheless it is anticipated that there will be enough information forthcoming to constitute a powerful stimulus to backward countries and to help to bring them into line

At all events the project is now ripening The decision of the conference of 1903 was that the French Government should forward propositions through diplomatic channels to the different States These proposals had however to be supplied by its own technical department This I have good reason to believe has been done within the last few days and the French Minister of Foreign Affairs (M Delcassé) is now in a position to supply the foreign governments with the text of the proposals as modified so as to prevent misunderstanding together with other indispensable details

NOTES FROM INDIA

(FROM OUR SPECIAL CORRESPONDENT)

The Animal Scavengers of Indian Cities —The Health of Bengal in 1903 —The Plague Epidemic

IT has generally been held that crows kites vultures jackals and pariah dogs are all very useful animals in an Indian town by feeding on the refuse and thus diminishing the amount which would decompose and have to be carted away An opinion has been growing up of late however that in cities they are not only a nuisance but may do more harm than good In a village refuse is deposited and left to every natural agency for its disposal In the small towns also there is hardly any attempt at conservancy Even in the large towns it is very indifferently carried out and it is only in the cities that any properly organised removal of rubbish and cleansing of the streets are in force In a large city animal scavengers cannot be calculated upon and it is found that they scatter rubbish about and distribute it in undesirable places In Calcutta an order has gone forth to destroy crows eggs and the question has also come before the Rangoon municipality The crows and kites are certainly the worst offenders but in some towns vultures also scatter as well as consume In addition the crows are by their noise and thieving capacities a public nuisance The danger of these birds lies in their habits of disseminating putrid filth and many a store of drinking water is poisoned by bits of refuse dropped from beak or claws while on the wing It may be said that where there is deposited refuse there the scavengers will be numerous and it speaks ill therefore for a city which is infested with crows They are not substitutes even for defective conservancy they are not necessary and as many eastern towns prove they can be done without

The report of the Sanitary Commissioner of Bengal for 1903 has just been issued It shows that the birth rate of this large and populous province is nearly 40 per 1000 and that the death rate is about 33 3 per 1000 More accurate returns and the comparative figures for the jails show that tuberculosis is much more common among the natives than was formerly supposed Infantile mortality is very high and a partial inquiry into some 2000 cases indicated that nearly 40 per cent of the deaths were due to malpraxis about the same percentage to malnutrition and nearly 20 per cent to mismanagement of labour and diseased parentage There was a great and widespread increase of small pox but the *vaccination department* can hardly be considered satisfactory and is to be reformed Little or nothing has been done in the direction of the destruction of mosquitoes but the jail superintendents are to take up this matter as an object lesson for the province It is recorded that 65 680 deaths occurred from plague in *Bengal* in 1903 and it is questioned whether more medical relief could not be furnished especially in the infected towns

The India is rapidly subsiding For th ere were 13 770 deaths as compa evious seven days The provincial figures are Punjab 12 269 deaths as against 18 086, United Provinces 420 as against 653 Bombay districts 547 as against 768 Bengal 129 as against 200 and Kashmir 81 as against 74 The last returns from Bombay city and from Calcutta are also much more favourable Instances of the irregularity of outbreaks and recurrences are shown by Benares which in the past cold weather has been practically free and by Mirzapur which was also badly infected in 1902 escaping almost entirely last year Now that the annual recrudescence is subsiding it is suggested by one of the leading European papers that the Government should institute an exhaustive scientific inquiry into the cause of plague and the life of the bacillus outside the human body At present the sanitarian is practically helpless and he will continue to be so until we learn more about the disease

June 17th

LIVERPOOL

(FROM OUR OWN CORRESPONDENT)

Health of Liverpool in 1903 Annual Report of the Medical Officer of Health

THE report of Dr F W Hope the medical officer of health on the health of Liverpool during 1903 has just been issued It is comprised in a volume of 238 pages illustrated by many maps and diagrams and contains a mass of vital statistics The city covers an area of over 23 square miles and has a population of 716 810 During 1903 the death rate 19 8 per 1000 of the inhabitants per annum was the lowest yet recorded There were 1090 fewer deaths than in 1902 The rate varied greatly in different districts In Sefton Park it was only *9 per 1000* whilst *in the Exchange* division it was 30 per 1000 The birth rate 33 3 per 1000 showed equal diversity It was 42 9 per 1000 in the Scotland division and in the Sefton Park district it was only 19 3 per 1000 On the other hand the infant death rate in the Scotland division was 215 per 1000 and in Sefton Park 88 per 1000 The greater part of the infant death rate was preventable Of 3815 deaths of infants under one year of age 627 died from atrophy and 763 from zymotic diseases Ever since 1873 there has been a steady increase in the mortality due to premature birth *92 infants were overlain* by their mothers During 1903 there was a serious outbreak of small pox The cases numbered 2032 141 being fatal The compulsory notification of chicken pox resulted in the discovery of 54 cases of small pox being mistaken for the former disease Typhus fever spread from an insanitary area since dealt with occasioned 272 fatal. There were 4053 cases of scarlet fever and 201 deaths; 27,289 cases of measles and 132 deaths; and whooping-cough caused 318 deaths (but this figure is by no means a complete representation of the mischief caused by it). Zymotic diarrhœa caused the deaths of 657 persons (almost all in the poorer and crowded districts), 461 being infants. Phthisis also carried off 1258 persons; 2067 cases were reported during the year. 170 persons died from alcoholism. Dr. Hope advocates hospital treatment for whooping-cough and an amendment of the Vaccination Acts in the direction of stringency. The deaths from small-pox in England are, he stated, nearly 20 times as many as in Germany where vaccination is strictly enforced. Part of the policy of the health committee is the abolition of ash-bins. Owing to demolitions 1123 insanitary courts have disappeared during the last 13 years. The city contains 558 registered lodging-houses, accommodating 14,091 lodgers; these are under close sanitary supervision. 21,719 houses are registered as sublet. During the year the health committee has had new duties thrown upon it, including the registration and supervision of midwives, the inspection of bakehouses, and the enforcement of the Employment of Children Act, which prohibits the employment of any child under 14 years of age. Great attention has been paid to the supply of milk; the daily consumption is 30,000 gallons. Inspection both of city shippons and farms supplying milk has been systematic. The lower death-rate of the city is due almost wholly to the saving of the lives of children owing to measures taken for the prevention as far as possible of infantile disease. The death-rate of infants during 1903 was 159 per 1000; during the three years preceding the average per 1000 was 178. At the same time the death-rate above one year of age has fallen from 16·7 per 1000 to 15 per 1000. 6295 infants have been fed on the milk supplied from the sterilised milk depôts and with the most satisfactory results, for although these children were to begin with below the average in health the death-rate among them was only 78 per 1000. The city hospitals for infectious diseases accommodated 925 patients. They were usually full; indeed, if it had not been for the incessant activity of the medical officer's staff, together with stringent scavenging, the population would be decimated by disease. In combating the outbreak of small-pox the department showed the greatest vigilance. At the meeting of the health committee held on June 30th the chairman remarked upon the declining death-rate, stating that the mortality during the present year (1904) was, so far, still more favourable.

University of Liverpool: First Public Conferring of Degrees.

The ceremony of conferring degrees on new graduates of the University of Liverpool took place at St. George's Hall on July 1st. This being the first public function of the kind which has taken place in the city it was decided to invest it with due impressiveness and in that respect the proceedings did not fall below anticipation. Both the body and the galleries of the hall were crowded with a representative assemblage of between 3000 and 4000 people. While the public were arriving the graduates and others, in academical costume, were marshalled in the west corridor, according to the faculties to which they belonged, Dr. Peace (the city organist) at the great organ playing selections during the interval. At noon the procession entered the hall, headed by the registrar, and proceeded to the allotted seats. It comprised graduates of the faculties of engineering, laws, science, and arts, including both new graduates and graduates of the Victoria University, who, under the provisions of the charter, had accepted an equivalent or taken a higher distinction in the University of Liverpool. Of the latter there were about 300. All wore costumes of the new University, a hood lined throughout with coloured silk, edged, in the case of bachelors, with white fur. The distinctive feature of the costume is that the robe is edged with silk of the same colour as the hood. There is, of course, a different colour for each faculty. Following the first section of the procession, the members of which were accommodated with seats in the body of the hall, there came a second, preceded by ushers and formed of graduates in medicine, Victoria graduates in laws, masters of engineering, masters of arts, and doctors of science. For these places were provided on the platform. They in turn preceded the members of the court [illegible] of the teaching body, and the council [illegible] Lord Mayor, the treasurer of the University, the pro-Chancellors, the Vice-Chancellor, and finally the Chancellor (the Earl of Derby). The Chancellor wore the costume of a doctor of laws. The first proceeding was the presentation of the Earl of Derby for the degree of doctor of laws. His lordship was presented to the Vice-Chancellor by Professor MacCunn who eulogised the many high qualities of the noble earl. The Chancellor in his reply said that they were in a position at last of being able to have a general admission of degrees—the first in the annals of the University. They had amongst them many who would receive honorary degrees and degrees of that University who had acquired their qualifications in University College and obtained their degrees in the University of which Liverpool was then only a part. Many graduates of Victoria University would be presented that day. Referring to the munificence of donors his lordship remarked that the Treasury had made their University a grant of £2000 a year, promising to increase that amount to £3000 at some future time. The Liverpool City Council showed its appreciation of the benefits that would accrue from the foundation of the University by granting £10,000 a year, £1000 of which are reserved for scholarships. The borough of Bootle had granted them £500 a year, half of which was to be expended in scholarships. They had during the last week been promised £10,000 by a friend who wished to remain unknown for the purpose of [illegible] English language. The family of the late [illegible] had given £1000 to found an entrance scholarship in arts, whilst Mr. W. Thelwall Thomas and Dr. G. Stopford Taylor had established fellowships for a term of years in medical subjects. He believed the University had before it a lengthy and brilliant career in training those who wished to make their own path in life as well as in advancing science, art, and all that tended to the higher life of man. He concluded by assuring his hearers that in his new capacity as Chancellor of the University he would do all in his power to advance the honour a[illegible] University. Lord Derby then formally [illegible] who were introduced by the deans of the respective faculties. The ceremony was incorrectly described in the local papers as the first function of the kind held in the city, as on March 25th (as described in THE LANCET of April 2nd, p. 960) four students were presented to the Vice-Chancellor (in the absence of the Chancellor) in the Tate Library of the University by the dean of the medical faculty and admitted to the degrees of bachelor of medicine and bachelor of surgery.

Liverpool University Association: Banquet to Dr. Londini.

Dr. Londini, who has recently resigned the office of registrar of the University of Liverpool to take up that of bursar, was entertained to dinner by the University Association at the Adelphi Hotel on June 30th, this being the second dinner of the association. Vice-Chancellor Dale presided. The chairman presented Dr. Londini on behalf of the association with a purse of gold and an address couched in poetic and jocose language. Dr. Londini suitably acknowledged the gift.

July 5th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENT.)

Edinburgh Company, Royal Army Medical Corps Volunteers: Presentation to Surgeon-Major D. Hepburn, 3rd Welsh Volunteer Battalion.

THE eighteenth annual dinner of this Company was held on June 29th in the Carlton Hotel, Edinburgh, when a presentation, subscribed for by past and present members, was made to Surgeon-Major Hepburn, the former commanding officer of the company. Between 70 and 80 members and guests were present, and among the latter were Colonel G. A. Hughes, D.S.O., R.A.M.C., principal medical officer of the Scottish district, Major J. Scott, R.A.M.C., Major Hope, Q.R.V.B., Surgeon-Captain C. B. Ker, Q.R.V.B., Mr. Cathcart, and other officers and friends. The chair was taken by Lieu[illegible] Waterston, the commanding officer, who made the [illegible] and in doing so [illegible] entertained towar[illegible] present mem[illegible]ld-wide, inclu[illegible] Australia, Canada, [illegible] the presentation, which took the form of a gold watch, Surgeon-Major Hepburn expressed the sincere regret which he had felt in severing his connexion with a company with which he had so long and pleasant a connexion. A very enjoyable evening was spent. The other speakers included Colonel Hughes and Mr. Cathcart, who was the first commanding officer of the company.

July 4th.

IRELAND.

(FROM OUR OWN CORRESPONDENT.)

Ulster Medical Society.

THE annual meeting of this society was held on June 30th in the Belfast Medical Institute. The reports of the secretary, the treasurer, and the librarian were presented and passed. There are now 150 Fellows and 36 members, making with the honorary and life members a total membership of 197. Nine meetings were held during the session with an average attendance of 43. There is a balance of £52 14*s*. 3*d*. and £50 have been invested in the Transvaal Loan. The following office-bearers were elected for next session: President, Professor J. Lorrain Smith; vice-presidents, Dr. J. B. Moore and Dr. W. E. Hadden (Portadown); secretary, Dr. T. Houston; treasurer, Dr. W. B. McQuitty; librarian, Dr. R. R. L. Leatham; members of council in addition to the seven permanent trustees, Dr. J. S. Morrow, Mr. R. Hall, Dr. D. J. McKinney, Dr. D P Gaussen, Dr. J. R. Davison, and Dr. W. L. Storey. Sir William Whitla presented to the Medical Institute, on behalf of Mrs. Gordon Stallard, a portrait of her father, the late Professor Gordon, which was unveiled by Mrs. John Campbell, wife of the President of the Ulster Medical Society, and accepted by the President. A vote of thanks to the donor was passed on the motion of Professor T. Sinclair, seconded by Dr. J. Nelson.

The Health of Belfast.

At a meeting of the city council of Belfast held on July 1st an important discussion took place following the report of the public health committee. It appears, in reference to the small-pox epidemic, that 94 cases had been admitted into the Purdysburn small-pox hospital, three had died, and 36 were still remaining on July 1st. Ample accommodation has been made for more and a resident physician has been appointed. The people had been urged to have themselves revaccinated. In the discussion one of the councillors (a medical man) spoke of the epidemic as "only of a trifling nature" but was corrected by the
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man) who said
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hospital. The
forward by one
tained that "defective foundations of houses, insufficient supply of pure water, and bad ventilation" were the causes of small-pox. It is gratifying to know that the public are responding largely to those who urge revaccination as the proper thing to be done, and it is hoped that the epidemic will soon be stamped out. As an evidence of the efficacy of revaccination it was pointed out that 39 out of 40 "contact" cases were revaccinated. These 39 escaped the small-pox while the one not revaccinated contracted the disease. Of the whole staff of the public health department only one contracted small-pox and that
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this epidemic the health of
being 19·5 per 1000, as comp
public health committee, in addition to advising revaccination, is urging early notification of smal
paring lists of houses from which cases of
have been notified for proprietors of laundries to examine
so as to protect their workers and their

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The Mater Infirmorum Hospital, Belfast.

The collection on behalf of this hospital on Saturday, June 25th, amounted to more than £800.

Sanatorium for Consumptives.

At a joint meeting of the Belfast public health committee and representatives of the board of guardians held on July 4th it was agreed that the corporation should be recommended to take immediate steps to provide for the erection of a sanatorium to accommodate cases of pulmonary tuberculosis which there may be reasonable expectation of curing, while the guardians on their part undertake to proceed with the provision of an auxiliary workhouse building for the care of the destitute poor who may suffer from the disease, it being understood that so far as possible the corporation will take over from them as paying patients cases which come under the category of "primary" or "hopeful" cases of the disease.

Sanitary Condition of Portadown.

Dr. C. J. Clibborn (Local Government Board inspector) reports on the defective sewerage of the district, on the need of a suitable ambulance for the conveyance to hospital of patients suffering from infectious disease, and on the desirability of providing a properly equipped disinfecting apparatus for the use of the locality. He also says that the water-supply is bad and inefficient and recommends the adoption of the Infectious Diseases (Prevention) Act, 1890. The report was considered at a meeting of the Portadown town council on July 4th.

July 5th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Tuberculosis among School Children.

AT the meeting of the Academy of Medicine held on June 21st Professor Grancher discussed this subject in an address which has produced a sensation and will mark an epoch in the history of tuberculosis. Assisted by some of his pupils he examined all the children in two of the schools of the city of Paris, the result being that in 14 per cent. of the boys and 17 per cent. of the girls he found positive signs of tuberculosis of the glands either of the neck or of the trachea and bronchi; half these children, already showing slight bacillary infection, were the offspring of tuberculous parents. All taken together, out of 896 children 141 were

symptoms of tuberculosis sooner or later. Professor Grancher made trial of dietetic treatment with some success. A small sum provided by the city enabled him to have a daily supply of meat powder and cod-liver oil issued to the affected children in the two schools which he had examined, and he
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the patients suffering from pronounced tuberculosis and the results would be no more than moderately successful.

Reduction of Congenital Dislocation of the Hip-joint by the Paci-Lorenz Method.

At a meeting of the Société de l'Internat des Hôpitaux de Paris held on June 23rd, M. Monnier, after remarking that not many years ago congenital dislocation of the hip-joint was regarded as incurable, said that the case was quite different now provided that the children were not more than eight years of age or ten at the outside, and provided that, as

—namely (1) firm pressure from above
thigh being strongly flexed on

months. Under chloroform the limb was then set at an angle of 45° and fixed in that position by a plaster splint for three months more, after radiography had shown the permanence of the reduction. In the sixth month another plaster splint (the third) was applied, the legs being now almost parallel. In the eighth or ninth month, up to which time the child had remained constantly in bed, the splints were removed, massage was used, and walking exercise was taken. In support of what he had said M. Monnier referred to the cases of two little girls who had recovered perfectly under this treatment. One of them, who suffered from dislocation of both hips, had double reduction performed at one operation when she was three years of age; the heads of the femora as seen in a radiograph were dislocated to the extent of 18 or 20 millimetres. The second patient who came under treatment at the age of four years had a dislocation on the left side with a shortening of 25 millimetres. It was, however, necessary to classify these cases, for with a boy of six years, the heads of whose femora as seen in a radiograph were of great size and considerably raised, efforts at reduction were continued for 45 minutes without success. The Paci-Lorenz method would only give good results when the cases were selected.

Therapeutic Action of Sugar.

At a recent meeting of the Therapeutical Society M. Toulouse gave an account of his investigations on the dietetic value of sugar in the various morbid conditions in which emaciation required to be treated. For this purpose he gave large quantities of sugar in addition to the food which might consist of either ordinary diet or milk diet. The sugar varied in amount from 50 grammes to 300 grammes (from one and three-quarters to ten ounces) a day, representing in the case of emaciated women as much as eight grammes of sugar per kilogramme of body weight. From the commencement of the treatment the patients gained in weight on an average 100 grammes a day; with some of them the gain was sometimes 500 grammes, being therefore greater than the weight of the sugar that had been taken. Some patients in a few months increased from 35 to 48 kilogrammes. Whilst the sugar was being given examination of the urine generally showed a diminution in the amount of the nitrogenous constituents without their relative proportions being sensibly altered. The action of the sugar was at its maximum when the patient was on milk diet and taking three litres of milk per day. On theoretical grounds gastric fermentation and disorders of digestion might have been expected from the use of so much sugar but no unpleasant effects of that kind were observed. The sugar did not pass into the urine in healthy individuals. These experiments showed that sugar was a therapeutic agent of great activity in all conditions of marked emaciation and that it did not disagree even with patients whose assimilation was imperfect in consequence of disorders of digestion.

Hypochloridation and Hyperchloridation without Bromide in Epilepsy.

At a meeting of the Société Médicale des Hôpitaux held on June 17th M. Toulouse said that since he had shown, in conjunction with M. C. Richet, the influence of chloride of sodium on the action of bromide in the treatment of epilepsy a great number of investigators guided by various considerations had demonstrated the importance of chloride of sodium in connexion with osmotic equilibrium and therefore as a factor in the general nutrition of the organism. In these circumstances it might become a question whether the hypothesis advanced by M. Toulouse and M. Richet in explanation of the new fact which they had brought to light was really the most probable explanation. These two observers supposed that when the tissues were no longer supplied with chloride their affinity for this salt and (in its absence) for allied substances would render them more susceptible to bromide. There might, however, be another explanation. The salt might perhaps in these experiments act by itself apart from the bromide and, for example, by producing alterations in the osmotic tension might affect the vitality of the tissues, especially the nerve tissue, and bring about conditions more favourable to epilepsy. M. Toulouse resolved to take up this question and to inquire whether the giving of salt in excess or the limitation of it appeared to have an effect on the progress of the disease in epileptics, some on milk diet and some on ordinary diet, but not treated with bromide. He now informed the society that he had found that daily quantities of chloride of sodium, varying from two to 25 grammes and given alternately to the same patients at periods when all the other conditions remained constant, had no effect on the frequency of the epileptic attacks. These negative results were important, for they narrowed the available explanations of this new fact so interesting in general pathology.

Monuments to Men of Science.

M. Charles Girault has handed over the Pasteur monument to the managing committee of the Pasteur Institute and it has been decided that the inauguration ceremony shall take place on July 16th. The President of the Republic has been invited by Dr. Roux, director of the Pasteur Institute, and has promised to be present. All the great officers of State will therefore attend and an invitation has been sent to the Institut de France.—On June 26th a memorial to Professor Panas was unveiled with much less ceremonial display at the Hôtel-Dieu. M. Panas was the first professor of ophthalmology in this hospital. The memorial is by the sculptor André Boucher and represents the late professor seated in the consultation room and having at his side a blind child, towards whom he is reaching out his hand preparatory to examining it. A commemorative medal has also been struck, showing on one side the features of M. Panas and on the other side the figure of Science raising a bandage from the eyes with the inscription—

> Arte et studio e tenebris in lucem revocat.

Several addresses were delivered, including one by the Dean of the Faculty of Medicine and the proceedings terminated with a speech by M. Chaumié, Minister of Public Instruction.

July 5th.

NEW YORK.

(FROM OUR OWN CORRESPONDENTS.)

The American Medical Association.

THE fifty-fifth annual meeting of the American Medical Association opened in Atlantic City on June 6th. The place of meeting was peculiarly well adapted for the purpose both by situation and by its facilities for accommodating and entertaining a large number of people. The House of Delegates held a session on June 6th, when the retiring president, Dr. Frank Billings of Chicago, occupied the chair.—Dr. George H. Simons of Chicago, the secretary, reported that the membership of the association in June, 1903, was 13,545, that 2413 new members had been added during the past year, and that 919 had been dropped on account of death, non-payment of dues, and other causes. The membership on May 1st, 1904, was 15,039.—Dr. Arthur D. Bevan of Chicago, speaking on the report of the committee on medical education, said that owing to the nature of the United States Government no help could be expected from that source in raising the standard of medical education but they must depend entirely on the efforts of a well-organised association.—Dr. C. A. L. Reed of Cincinnati, Ohio, speaking on medical legislation, said that they had arranged to have a correspondent in every county in the United States. They had succeeded in getting 1940 such correspondents and had issued commissions to each, urging them to use all means in their power, both political and personal, to secure such legislation as the association should desire. They had made an effort to secure the appointment of a physician on the Panama Canal Commission. They had secured the passage of the Bill giving the marine and navy hospitals nurses and dentists. Their request that a representative of the medical corps should be detailed to serve on the general staff of the army had been granted. The entire profession was urged to make an effort to have physicians nominated and elected to Congress, as the lack of such representation was the most serious obstacle encountered in their efforts on behalf of the public welfare and of the profession itself.—At the meeting of the House of Delegates held on June 8th, Dr. Henry D. Holden of Brattleborough, Vermont, said that since the attention of the profession and the public had been drawn to the fact that the effects of venereal disease upon public health were comparable to those of alcoholism or tuberculosis, the national, State, and municipal authorities would be willing to coöperate in securing legislation for the prevention of the spread of this class of diseases. At present 33 States had no laws whatever on this subject except municipal ones. Michigan had a law forbidding the marriage of persons affected with this class of diseases and fixing a fine of from $500 (£100) to $1000 (£200) for its violation. The influence of the association in assisting the study of venereal diseases and in securing legislation for the prevention of their dissemination was urged.—At the general session of the association, the first meeting of which took place on June 7th, one of the most interesting subjects of discussion was the proposed memorial to the late Major Walter Reed who discovered that a mosquito conveyed yellow fever to man. Dr. W. W. Keen of Philadelphia informed the association that the committee of which he was chairman had been incorporated in the District of Columbia and was thoroughly equipped to take care of any funds for the purpose of raising a memorial to Major Walter Reed. He proposed that the association should contribute $10,000 (£2000) for the purpose.—Dr. William Welsh of Baltimore made an eloquent speech in support of Dr. Keen's motion.—The California State Society subscribed $500 (£100) to the fund and a number of physicians subscribed $1000 (£200) so that at the close of the meeting Dr. Keen was able to announce that $7500 (£1500) had been subscribed.—Dr. John H. Musser of Philadelphia was then introduced as president-elect and delivered an oration on Some Aspects of Medical Education.—The oration on medicine was made by Dr. George Dock, Ann Arbor, Michigan, after which a symposium was held for a discussion on Institutions doing Research Work for the Science of Medicine.

University of New York Medical College.

At a special meeting of the council of the University of New York held recently it was determined to purchase land adjoining the new college building and to proceed at once with the erection of a six-storey building for the clinics and laboratories of the medical college. Plans were submitted and approved and a building committee was appointed. The proposed building will adjoin at the rear the Carnegie laboratory which is a part of the University.

The Proposed Abolition of Coroners in New York.

There was general satisfaction both in lay and medical circles when a Bill for the abolition of coroners in New York city passed through the State legislature,[1] but the rejoicing was decidedly premature, for the Mayor has now vetoed the Bill.

Exclusion of Objectionable Advertisements from the Mails.

The Post Office Department of the General Government has taken a most important step towards the suppression of quack advertising. Those advertisements which are decided to be offensive in their character will be excluded for violation of the law as regards decency and those which advertise "fake preparations" will be excluded on the ground of fraud on the public. The plan of procedure will be to refer all drugs and nostrums to the Department of Agriculture for analysis to determine the sincerity of their claims as medicines and the facts of the analysis will then be referred to the Law Department for final action. It has been held by the law authority that any contract for advertisements of such objectionable matters is void when the Post Office Department has decided adversely on the character of the advertisement. The Postmaster-General states that the question of admission to the mails of newspapers containing advertisements treating of "private" diseases and offering for sale medicines designed for unlawful purposes has already been considered and it has been decided that such advertisements are forbidden circulation in the mails by the Act of Congress which declares to be unmailable any print or other publication of an indecent character and every article or thing designed or intended for the prevention of conception. On presentation to the department of any advertisement such as described the same will be duly considered and appropriate action taken.

Reciprocity among Examining and Licensing Medical Boards.

Most of the States have licensing medical boards befor which every intending practitioner must appear and pass an examination and show his diploma before he can be registered as a qualified physician. But these laws differ in different States and an association has been formed for the purpose of securing reciprocal relations between the board of the States and thus avoiding the necessity of repeating the examination when a physician removes from one State to another. At a recent meeting of the association a basis for reciprocal registration was presented under which the association or confederation is now working. This agreement recommends that there shall be uniform entrance requirements in all of the medical colleges, uniform standard curricula, and uniformity in the State board examinations for licentiates, with such additions as each board may see fit to make. Committees were appointed to confer with other bodies in regard to the plan proposed and to report at the next meeting to be held in October.

June 24th.

Obituary.

ALEXANDER OBERLIN MACKELLAR, M.D. R.U.I., F.R.C.S. ENG.,

SURGEON-IN-CHIEF TO THE METROPOLITAN POLICE.

FEW of the older generation of civilian practitioners have had more experience of the surgery of the battle-field than had Alexander Oberlin Mackellar whose death, as already announced in our columns, took place on June 15th at Bella Vista, Royston Park, Pinner, near London. He was born on Dec. 29th, 1845, at New Amsterdam, Berbice, British Guiana, where his father, who was a missionary, died from yellow fever in the previous August. At the age of six months he was brought to England and lived with an uncle until, when about ten years of age, he was sent to Silcoats school. His medical education was received chiefly at the Owens College and the Royal Infirmary, Manchester, and at Queen's College, Belfast. He also attended medical classes at University College, London, and in Paris. In 1869 he graduated as M.D. and M.Ch. at the Royal University of Ireland and in 1873 he was admitted F.R.C.S. Eng. He served in the Franco-Prussian campaign of 1870-71, for his work in connexion with which he was made a knight of the Military Order of Bavaria. Not long after his return to England he was appointed assistant surgeon to St. Thomas's Hospital but during great part of the years 1876 and 1877 he was in Eastern Europe, first as chief surgeon of the English ambulance in the Turko-Servian war, and secondly as consulting surgeon of the fifth ambulance of the Red Crescent in the Russo-Turkish war. For his work in these two campaigns he received decorations, being made a Knight Gold Cross of Takovo for the former and a Knight of the Order of Medjidieh for the latter. In 1885 he delivered the introductory address at the opening of the session at St. Thomas's Hospital; this address, an abstract of which appeared in THE LANCET of Oct. 10th, 1885, not unnaturally referred in very favourable terms to the opportunities presented by the medical service of the army. In 1886 Mr. Francis Mason died and the vacancy thus created was filled by the appointment of Mr. Mackellar as surgeon to the hospital Within a comparatively short time afterwards he succeeded Mr. Timothy Holmes in the office of surgeon-in-chief to the metropolitan police. This position is no sinecure and henceforth his energies were largely devoted to routine official work. Mr. Mackellar has left a widow for whom his numerous friends have expressed much sympathy in the loss which she has sustained.

One who knew him well in the days when he was on the staff of St. Thomas's Hospital has written to us as follows: "Mr. Mackellar joined the staff of St. Thomas's Hospital as resident assistant surgeon, coming from the Royal Free Hospital, where he had been senior house surgeon, with a reputation enhanced by the report of his services as an ambulance surgeon during the Franco-German war. Few of those who remember him at that time will ever forget the impression that he made, more especially on the students who came under his influence. 'Of good presence, with a ready and engaging manner, a fluent speaker, a good teacher and operator, his immediate acceptance as an acquisition to the hospital was assured and it was soon forgotten that he was not entirely a St. Thomas's man. He became assistant surgeon to the hospital and was granted leave of absence to serve with the Stafford House Committee's Ambul during the Turko-Servian campaign and during the f

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[1] THE LANCET, May 7th (p. 1314) and May 14th (p. 1365), 1904.

Consequently the Local Government Board was unable to sanction the arrangement proposed in August, 1902. It is open to the guardians under Article 10 of the Dispensary Rules to appoint a small committee of its members for the purposes mentioned in the question. In the majority of the unions the guardians themselves examine the books. Elsewhere the duty has been delegated to a committee of guardians with satisfactory results.

Beri-beri in the Port of London.

Colonel Legge asked the Secretary of State for the Home Department whether his attention had been called to a statement made by Sir Patrick Manson in an address delivered at St. George's Hospital on Oct. 1st, 1897, that beri-beri was very common in the Port of London, especially among the Lascars and Seedy boys who in many instances formed the bulk of the crews of the large steamers trading to the East; whether he could state how many cases were treated annually at the Seamen's Hospital; and what precautions were taken to prevent the spread of the disease.—Mr. Long answered: My attention has been drawn to the statement referred to in the question. I am informed that the number of cases of beri-beri treated annually in the Seamen's Hospital in the ten years ended in 1900 averaged 24. The disease is not regarded by the medical officer of the Port of London as infectious in the ordinary sense and no special precautions are considered necessary.

Beri-beri in South Africa.

Major Seely asked the President of the Board of Trade whether he was aware that by the provisions of the Natal Act, Immigration (restricted), 1903, the master and owners of any vessel from which any person suffering from a loathsome or a dangerous contagious disease might be landed were liable to a penalty of from £100 to £5000; whether the master or owners of the British ship *Tweeddale*, from which immigrants suffering from beri-beri were landed at Durban, had been subjected to the penalties referred to; and whether he would take steps to warn the masters and owners of British ships of the penalties to which they were liable for any infringement of the provisions of the above Act while engaging in this traffic.—Mr. Lyttelton, who replied, said: I have telegraphed for information to the officer administering the Government of Natal and have received the following answer: "My Ministers suggest that you give following reply to question. It is the custom in Natal to subject persons to penalties after they have broken the law, not before. The *Tweeddale* did not infringe the Immigration Restriction Act. No British ships are liable to penalties for engaging in this traffic—namely, the conveyance of Chinese immigrants under a scheme approved by the Government of Natal. Both shipmasters and Transvaal Government have been duly informed of our law and of the requirements thereunder." It will be observed that the Natal authorities do not consider beri-beri to be a loathsome or dangerous contagious disease.

Tuesday, July 5th.

Distillation of English Spirit.

Mr. William M'Killop asked the Chancellor of the Exchequer whether he would state the total quantity of spirit distilled in England during the year 1903, and how much was used for methylation, rectifying, and compounding purposes; whether any English spirit was used as whisky in Customs warehouses in Leith, and, if so, what was the total quantity despatched thereto from distilleries in England; whether he had any official information showing the materials from which English spirit was usually distilled; and whether any beet molasses from abroad was used in its manufacture.—The Chancellor of the Exchequer answering said: The total quantity of spirits distilled in England during the year ended March 31st, 1904, was 11,694,851 proof gallons. The quantity of home-made spirits used for methylation during the same period was 4,398,002 proof gallons. I have no means of knowing the quantities used for rectifying and compounding. 33,300 proof gallons of British spirits were despatched to Customs warehouses at Leith from English distilleries during the 12 months ended June 30th, 1904. The materials commonly used in the distillation of English spirit are malt, unmalted grain, molasses, sugar, glucose, and rice. No doubt beet is used to some extent but I have no means of knowing the quantities.

Ankylostomiasis.

Mr. John Wilson (Durham) asked the Secretary of State for the Home Department whether he had taken or would take steps to insure that in the event of a case of miner's disease [illegible] arising in any coal or metalliferous mine a [illegible] be forthwith sent to the medical officer [illegible] inspector of the district in which such mine was situate and that the isolation of cases that might arise should be secured; and whether, if the administrative powers of the Home Office were not adequate for the purpose, he would introduce the necessary legislation.—Mr. Akers-Douglas replied: I have not yet learnt the results of the conferences between owners and men which were to be arranged in each district to discuss this subject generally and until I do so any statement as to the precise steps to be taken for the prevention of the disease would be premature, but I doubt whether from the nature of the case it is practicable to require notification and isolation of every case of the disease. I am glad to say that no case has yet been found in a coal mine.

The Production of Calf Lymph.

Mr. Field asked the President of the Local Government Board whether the Government hired live calves for the purposes of vaccinating for lymph, at what cost and how long those calves were kept, what became of them after being returned to the owner, whether this class of meat was sold as veal for public consumption, whether he had any reports on its fitness for human food by local medical officers of health, and whether it was identified when being sold as lymph veal.—Mr. Long replied as follows: Calves are hired at a cost of from 20*s.* to 25*s.* a week for the purpose mentioned. The number of calves used varies. At present the average number is approximately 15 weekly. The calves are kept for about two weeks. After the lymph has been collected from them they are slaughtered and their carcasses are thoroughly examined by a veterinary expert. Sound carcasses are delivered to the contractor by whom the animals are supplied to be disposed of as he think fits. The concern of the department in the matter then ceases. I am not aware that any medical officer of health has made a report on the subject but I am advised that when the carcasses are found to be sound there is no reason why they should not be sold for food. I have no information as to the practice with regard to the sale of carcasses as meat. The number of the carcasses delivered to the contractor in 1903–04 was about 1000. This is above the average.

BOOKS, ETC., RECEIVED.

Allan, T. and G., Newcastle-upon-Tyne.

Notes on Percentage Calculations, with Examples. By Frank R. Dudderidge, F.C.S., Pharmaceutical Chemist, Principal of the *North of England School of Chemistry and Pharmacy* (55, Northumberland-street, Newcastle-on-Tyne). Price 6*d.*

Churchill, J. & A., 7, Great Marlborough-street, W.

A Manual and Atlas of Medical Ophthalmoscopy. By Sir William R. Gowers, M.D., F.R.C.P., F.R.S. Fourth edition. Edited by the Author and Marcus Gunn, M.B., F.R.C.S., Surgeon to the Royal London Ophthalmic Hospital. Price 14*s.* net.

Collingridge, W. H. & L., Aldersgate-street, E.C.

Easily-grown Hardy Perennials: Being a Description, with Notes on *Habit* and *Uses*, and *Directions* for Culture and Propagation, of Selected Perennial and Some Biennial Outdoor Plants, Bulbs, and Tubers, comprising all of the best known Genera and Species. Illustrated by 255 Reproductions of Photographs. By George *H. Vos, B.A., &c. (Cambridge). Editorially supervised* by T. W. Sanders, F.L.S., F.R.H.S., editor of *Amateur Gardening*, &c. Price 5*s.*

Fischer, Gustav, Jena.

Die multiple Sklerose des Gehirns und Ruckenmarks. Ihre Pathologie und Behandlung, klinisch bearbeitet von Dr. Eduard Müller, Privatdozent an der Universität und Assistenzarzt an der medizinischen Klinik zu Breslau. Mit einem Vorwort von Professor Dr. Adolf von Strümpell in Breslau. Price M. 10.

Die Frühdiagnose des Abdominaltyphus. Eine klinische und literarische Studie. Von Dr. A. Kühn, Privatdozent an der Universitat Rostock. Price M. 3.60.

Hirschwald, August, Unter den Linden, 68, Berlin, N.W.

Die Fruchtabtreibung durch Gifte und andere Mittel. Ein Handbuch fur Aerzte und Juristen. Von. Prof. Dr. L. Lewin. *Zweite umgearbeitete und vermehrte Auflage. Price M. 10.*

Das Gansersche Symptom, seine klinische und forense Bedeutung. Von Dr. med. Julius Hey, Nervenarzt in Strassburg i. Els. Price M. 3.

John Bale, Sons, and Danielsson, *Limited*, 83–91, Great Titchfield-street, Oxford-street, W.

On the Extraction Operation, with Special Reference to the Use of the Elevator. By G. Mulready Keevil, M.R.C.S., L.R.C.P. Lond., L.D.S. Eng. Price not stated.

Clinical Records of "Light" and "X-ray" Therapy (Illustrated). By G. G. Stopford Taylor, M.D. Durh., M.R.C.S., L.R.C.P., Hon. Attending Physician to the Liverpool Skin Hospital. Price 5*s.* net.

Johnson, R. Brimley, 4, Adam-street, Adelphi, W.C.

Devices and Desires. Poems by P. H. Lulham, M.R.C.S., *L.R.C.P. Price 3s. 6d. net.*

Twenty Years of [illegible] 882–1901. With facsimile Illustrations of [illegible] rawings. By Edward T. Bennett, Assist [illegible] Society for Psychical Research, 1882–1902. Price 1*s.*

King, P. S., and Son, Orchard House, Westminster, S.W.

Public Interests or Trade [illegible] Examination of some Important Issues [illegible] Bill, 1904. By Joseph Rowntree and Ar [illegible] uthors of "The Temperance Problem and Social Reform." Price 1*s.* net.

Kündig, H., Corraterie, 11, Geneva.

Le Ventre. *Etude Anatomique et Clinique de la Cavité Abdominale* au point de Vue du Massage. I. Le Rein. Par le Dr. M. Bourcart, Privat-docent à l'Université de Genève, Membre correspondant de la Société de Kinésithérapie. Price Fr. 10.

Les Fractures de l'Humérus et du Fémur. Par le Dr. Théodore Kocher, Professeur de Clinique Chirurgicale à l'Université de Berne. Traduit de l'Allemand par le Dr. L. Senn, Chef de *Clinique Chirurgicale à l'Université de Lausanne. Price Fr. 15.*

Office of the Superintendent of Government Printing, Calcutta.

Annual Report of the Sanitary Commissioner with the Government of India, 1902, with Appendices and Returns of Sickness and Mortality among European Troops, Native Troops, and Prisoners in India, for the Year. Price Three Rupees, or 4*s.* 6*d.*

Pentland, Young J., Edinburgh and London.

Manual of Practical Ophthalmology. By George A. Berry, M.B., F.R.C.S. Edin., Senior Ophthalmic Surgeon, Royal Infirmary; Surgeon, Edinburgh Eye Dispensary. Price not stated.

The Edinburgh Medical Journal. Edited by G. A. Gibson, M.D., F.R.C.P. Edin., and Alexis Thomson, M.D., F.R.C.S. Edin. New Series. Vol. XV. Price not stated.

P. Blakiston's Son and Co., 1012, Walnut-street, Philadelphia. (*Rebman, Limited, 129, Shaftesbury-avenue, W.C.*)

A Manual of Fever Nursing. By Reynold Webb Wilcox, M.A., M.D., LL.D., Professor of Medicine in the New York *Post-graduate* Medical School and Hospital. Price $1.00 net.

Steinheil, G., 2, Rue Casimir-Delavigne, Paris.

Précis de Thérapeutique Oculaire. Par le Docteur Scrini, Chef de Clinique Ophthalmologique de la Faculté de Paris à l'Hôtel-Dieu. Préface du Professeur De Lapersonne. Price Fr. 5.

Le Liquide Céphalo-Rachidien. Par le Docteur Milian, Ancien Interne des Hôpitaux de Paris, Ancien Chef de Clinique à la Faculté de Paris. Price Fr. 6.

[illegible] , verifiés, rectifiés ou établis [illegible] o Mannequin Naturel et de [illegible] Introduction à l'Étude [illegible] couchements. Par le Pro- [illegible] r Henri Varnier. Préface du [illegible] dition, Revue et Corrigée. Price Fr. 15.

WILEY, JOHN, AND SONS, New York. (**CHAPMAN AND HALL, Limited**, London.)

A Laboratory Manual of Organic Chemistry for Beginners. By Dr. A. F. Holleman, Professor Ordinarius in the University of Groningen, Netherlands, and Fellow of the Royal Academy of Sciences, Amsterdam. An Appendix to the Author's Text book of Organic Chemistry. Translated from the Dutch by A. Jamieson Walker, Ph.D. (Heidelberg), B.A., Head of the Department of Chemistry, Technical College, Derby, England. With the co-operation of the Author. First edition. Price, cloth, $1 00 net.

WILLIAMS AND NORGATE, 14, Henrietta street, Covent Garden, W.C. (Published for the University Press of Liverpool.)

The Human Sternum. Three Lectures delivered at the Royal College of Surgeons, England, November, 1903. By Andrew Melville Paterson, M.D., Derby Professor of Anatomy in the University of Liverpool. Price 10s net.

A Treatise on Epizootic Lymphangitis. By Captain W. A. Pallin, F.R.C.V.S., Army Veterinary Department. Price 2s. 6d.

WRIGHT, JOHN, AND CO., Bristol (**SIMPKIN, MARSHALL, HAMILTON, KENT, AND CO., LIMITED**, London).

Acid Autointoxications: [illegible] on the Pathology and [illegible] Nutrition. By Profes [illegible] Chief to the City I [illegible] Authorised translation [illegible] City Hospital, Frankfort-a-M., and Dr. Carl Dapper, Bad Kissingen. Authorised translation under the direction of Boardman Reed, M.D., Philadelphia. Price 3s. net.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

[illegible] Limited.

EDMUNDS, EDGAR FLETCHER, M.B., B.S. Durh., has been appointed Assistant House Surgeon to the Rotherham Hospital and Dispensary.

[illegible] M.D. Toronto, has been appointed Clinical Assistant [illegible] Demon- [illegible] Officer at [illegible] ed House [illegible] Hospital, [illegible]

PALMER, FREDERICK S., M.D., M.R.C.P., has been appointed Assistant Physician to the West-end Hospital for Diseases of the Nervous System.

PET[illegible]

SA[illegible]

STR[illegible]

[illegible] lth [illegible] ns- [illegible] ted [illegible]

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

ARMY ME[illegible] less than 30 Cor[illegible]

AYR DIST[illegible] Salary £120, [illegible]

BIRKENHE[illegible] Surgeon. Salary £80 and fees.

BIRMINGHAM GENERAL HOSPITAL.—Assistant Physician. Honorarium of £100 per annum.

BIRMINGHAM INFIRMARY.—Assistant Resident Medical Officer. Salary £104 per annum, and apartments, rations, coals, gas, laundry, and attendance.

BIRMINGHAM, UNIVERSITY OF.—Walter Myers Travelling Studentship. Value £150.

BRECON AND RADNOR ASYLUM, Talgarth, R.S.O.—Assistant Medical Officer, unmarried. Salary £1[illegible] per annum, with apartments, [illegible]

[illegible] Church street, Queen's road.— [illegible] six months, renewable. Salary [illegible]

[illegible] Salary [illegible] ctoria [illegible] ate of [illegible] geon. [illegible] lance. [illegible] un- [illegible] geon. [illegible] with [illegible] istant Physician.

HEREFORD COUNTY AND CITY ASYLUM.—Senior Assistant Medical Officer, unmarried. Salary £150 per annum, with board, lodging, and laundry.

HOSPITAL FOR SICK CHILDREN, Great Ormond street, London, W.C.—Surgeon Dentist.

LEEDS, CITY OF.—INFECTIOUS DISEASES HOSPITALS.—Second Assistant Resident Medical Officer. Salary £120 a year, with board, lodging, and washing.

NEW ZEALAND, SEACLIFF LUNATIC ASYLUM, Dunedin.—Assistant Medical Officer, unmarried. Salary £250, with board, lodging, and washing.

NOR[illegible] **HOSPITAL**, Hartshill, [illegible] for six months. [illegible] ing.

NO[illegible] Mansfield.—Resident [illegible] board, lodging, and washing.

ROY[illegible] OF THE [illegible] arried. [illegible] Also [illegible] £100 per annum, with board and lodging.

SOUTH DEVON AND EAST CORNWALL HOSPITAL, Plymouth.—Honorary Pathologist.

SOUTHWARK UNION INFIRMARY, East Dulwich.—Second Assistant Medical Officer. Salary £100 per annum, with board, lodging, and washing.

***STOCKPORT INFIRMARY**.—Junior Assistant House Surgeon for six* months. Salary at rate of £40 per annum, with board, washing, and residence.

VICTORIA UNIVERSITY OF MANCHESTER.—Junior Demonstrator of Physiology.

WEST BROMWICH DISTRICT HOSPITAL.—Resident Junior House Surgeon. Salary £50 per annum, with board, lodging, washing, [illegible] Officer of [illegible] —House [illegible] washing.

THE Chief Inspector of Factories, Home Office, S.W., gives notice of vacancies as *Certifying Surgeons under the Factory Act* at Uffculme, in the county of Devon, at Marple, in the county of Cheshire, and at Grays, in the county of Essex.

Births, Marriages, and Deaths.

BIRTHS.

AUSTIN ROBINSON.—[illegible] road, Natal, the [illegible] ham-road (née L[illegible]

DICKSON.—On July [illegible] wife of Graeme Dickson, L.R.C.P., &c., of a daughter.

SCALE.—On May 28th, at "Oakfield," Ceres, Cape Colony, the wife of Edward A. Scale, M.D., of a daughter.

[illegible] ckfergus, [illegible] nstance, [illegible] Carrickfergus.

[illegible] On July 2nd, at St. Margaret's Church, [illegible] the Rev. J. Bell Cox, George Graves, [illegible] Whitwell of Shrewsbury, to Gladys [illegible] the late Benjamin Brancker of Fern [illegible] ancker, Summer Hill, Oswestry.

DEATHS.

ELLIOT.—On July 4th, at Bexhill, Norman Bruce Elliot, M.D., *F.R.C.S., M.R.C.P.*, Barrister at law.

SCA[illegible] Sussex, John [illegible] H. Charlotte [illegible]

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

LOOK ON THIS PICTURE AND ON THIS.

A CORRESPONDENT has sent us the two following exhibits marked A and B:—

[A]

MIDWIFERY. VACCINATION. TEETH EXTRACTED.

HOURS—Mornings, 9.30 to 12 | Sunday Mornings, 9.30 to 10.30
Evenings, 6.30 to 9 | Evenings, 7 to 8.30

Advice and Medicine at Surgery.

ADULTS, 1/- CHILDREN, 6d.

VISIT & MEDICINE, 1/6

Terms Or 5/- for the week. Cash.

[B]

Any enquiry respecting the case must be accompanied by this card.

DR. W. C. ——.

The Victoria Hospital for Children,
QUEEN'S ROAD, CHELSEA.

OUT-PATIENT TICKET, No. C..........................
ONE SHILLING. R..........................

You are to attend your PHYSICIAN on MONDAY at 1.30 p.m., and THURSDAYS at 9.30 a.m.

Each Patient to bring a clean Bottle.

Take Notice, that if you neglect attending for Six Weeks the paper will be removed from your book. This card must be taken great care of and brought to the Hospital every visit.

THREEPENCE will be charged for each visit in the month.
(Available for one month only.)

Of A he says that the medical man who issued it received a reproof from the corporation to which he [illegible] ays that it can be obtained from the hospital [illegible] He asks us to indicate the difference betwe[illegible] cannot; but some of our readers might like to draw distinctions between the offer of cheap medical attendance when made by a practitioner and when made by a hospital.

F.R.C.S. EDIN. FOR PRACTITIONER OF TEN YEARS' STANDING.

A CORRESPONDENT writes: "I should be much obliged if any of your readers could give information about this examination—books to be read and which is the best optional subject."

HOLMAN TESTIMONIAL FUND.

THE following additional subscriptions to the above fund have been received:—

	£	s.	d.
Dr. E. C. Arnold	1	1	0
Mr. G. H. Barton	0	2	6
Dr. C. Dorrington Bath, J.P.	1	1	0
Mr. C. F. Wakefield ...	0	10	6
Mr. J. D. Malcolm	1	1	0
Dr. Bransby Roberts ...	1	0	0
Mr. E. Noble Smith ...	1	1	0
Mr. Alfred Winkfield ...	1	1	0
Mr. T. H. Martin	1	1	0
Mr. E. G. A. Walker ..	1	1	0
Dr. J. Hewetson	1	1	0
Dr. Clement Godson ...	1	1	0
Mr. C. T. Carnes	2	2	0
Balance at disposal of the South-East Branch of the British Medical Association, per Mr. T. J. Verrall	35	11	9
Dr. J. Mitchell Bruce ...	2	2	0
Dr. J. F. Goodhart ...	3	3	0
Sir John Puleston	2	0	0
Dr. R. M. Miller	1	1	0

The amount now subscribed is £422 16*s.* 9*d.* and an additional sum of £100 is required to carry out the proposed scheme of erecting an art and reading room at Epsom College. A further and, it is to be hoped, final list will be published in a month's time. Subscriptions of any amount will be received by Dr. John H. Galton, Chunam, Sylvan-road, Norwood, or by Mr. W. A. Berridge, Oakfield, Redhill, Surrey.

TAXATION OF CATS.

AT the last meeting of the Church Society for the Promotion of Kindness to Animals, held on July 1st at the Church House, Westminster, a paper was read by Mr. F. G. Aflalo on the Taxation of Cats. Mr. Aflalo advocated the imposition of a 2*s.* 6*d.* tax upon cats, advancing as reasons in support of his argument that a tax would raise the value of the animals and lead to their more humane treatment, while the revenue might be a considerable gainer thereby. The views of Mr. Aflalo received the endorsement of the meeting and for our part we agree with them. The rôle played by domestic animals in the propagation of disease is as yet ill-understood but cats of all domestic animals are the most nursed. They live in dangerous intimacy with many families and we welcome any departure likely to lead to the diminution of their number and to an increase in their individual value which will imply additional care as to their health.

THORNE DEFENCE FUND.

To the Editors of THE LANCET.

SIRS,—We beg to inclose a final list of subscriptions. The taxed costs, which are less than was originally expected, amount to £177 9*s.* 1*d.* This sum, added to the £25 damages which were awarded, brings the total expenses to £202 9*s.* 1*d.* The amount raised by subscriptions is £219 2*s.* It has been decided to divide the balance of £16 12*s.* 11*d.* equally between the New Hospital for Women and the Royal Free Hospital. It is hoped that this distribution of the surplus will meet with the general approval of the subscribers.

We are, Sirs, yours faithfully,
WALTER S. A. GRIFFITH, M.D. Cantab.
WALTER TATE, M.D. Lond.
DOUGLAS DREW, F.R.C.S. Eng.

Queen Anne-street, Cavendish-square, W., July 6th, 1904.

	£	s.	d.
Amount previously subscribed	208	12	0
Dr. W. A. Wills	1	1	0
Dr. Janet Gray	1	1	0
Dr. Caroline Sturge .	1	1	0
Sir Thomas Smith, Bart.	2	2	0
Dr. Jane Walker	2	2	0
Dr. Raymond H. P. Crawford	1	1	0
Dr. Jessie MacGregor...	1	1	0
Dr. Beatrice Harrison...	1	1	0
Total	£219	2	0

◆

Sigma.—We do not think there is [illegible] t our correspondent's view, especially as [illegible] to be traced to meats which have not bee[illegible] there are no well-marked or outward signs of putrefactive processes having taken place.

R. S. F.—Salicyl sulphonic acid may be obtained from most dealers in chemical reagents. It is quoted in the list of Messrs Baird and Tatlock of 14, Cross street, Hatton-garden, London, E.C.

J. P. S.—We sympathise with our correspondent's view, speaking generally, but we do not think his letter has been aroused by any very glaring piece [illegible] snobbery.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (11th).—London (2 P.M.), S[illegible] Thomas's (3.30 P.M.), St. George's [illegible] Middlesex (1.30 P.M.), Westmins[illegible] Samaritan (Gynæcological, by Pl[illegible] (2 P.M.), Royal Orthopædic (2 P.[illegible] Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.).

TUESDAY (12th).—London (2 P.M[illegible]), St. Thomas's (3.30 P.M.), Guy's (1.[illegible] Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Royal Ear (3 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.).

WEDNESDAY (13th).—St Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.) Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden square (9.30 A.M.), Guy's (1.30 P.M.).

THURSDAY (14th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 [illegible] St. George's (1 P.M.), London (2 P.M.), [illegible] (1.30 P.M.), St. Mary's (2.30 P.M.), [illegible] London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.).

FRIDAY (15th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M[illegible] Charing Cross (3 P.M.), St. [illegible] Mary's (2 P.M.), Ophthalr[illegible] M.), Gt. Northern Central [illegible] London Throat (9.30 A.M[illegible] Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho square (2 P.M.), Central London Throat and Ear (2 P.M.).

SATURDAY (16th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1 30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

TUESDAY (12th).—SOCIETY FOR THE STUDY OF INEBRIETY (Rooms of the Medical Society of London, 11, Chandos street, Cavendish-square, W.)—3 30 P.M. Council Meeting. 4 P.M. Discussion on the Criminal Responsibility of the Alcoholic (opened by Dr. W. C. Sullivan).

[illegible] AL SOCIETY OF LONDON (11, [illegible] W.).—5 15 P.M. Demonstration [illegible]

[illegible] OGICAL SOCIETY (20, Hanover- [illegible] be shown by Mr. C. Martin, Dr. Macnaughton-Jones, and Mr. B. Jessett. Dr. J. Aarons: New Instrument.

NEUROLOGICAL SOCIETY OF THE UNITED KINGDOM (11, Chandos- [illegible] ng. Exhibi- [illegible]

[illegible] CHILDREN [illegible] Lucas: The [illegible] tion to the [illegible]

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

[illegible]

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies street, W.C.).—4 P.M. Dr. W. Carr: Clinique (Medical.) 5 15 P.M. Sir Isambard Owen: Cardiac Failure.

WEDNESDAY (13th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith road, W.).—5 P.M. Dr. Beddard: Practical Medicine.

[illegible] nies street, [illegible] 5 15 P.M.

[illegible] ST (Bromp- [illegible] of Unusual [illegible]

[illegible] n).—4 P.M [illegible]

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[illegible] insertion or for private informa- [illegible] d addresses of [illegible]

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THE INDEX TO THE LANCET.

THE Index to Vol. I. of 1904, which was completed with the issue of June 25th, and the Title-page to the Volume, were given in THE LANCET of July 2nd.

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METEOROLOGICAL READINGS.

(Taken daily at 8 30 a m. by Steward's Instruments.)

THE LANCET Office, July 7th, 1904.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind	Rain fall	Solar Radia in Vacuo	Maximum Temp. Shade	Min Temp	Wet Bulb.	Dry Bulb	Remarks at 8 30 A.M.
July 1	29 86	W.	.	125	73	57	56	62	Cloudy
" 2	29 95	W.	0·07	119	70	54	55	61	Cloudy
" 3	29·99	W.	0 05	103	68	56	57	58	Raining
" 4	30·06	W.	0·28	124	71	53	55	61	Cloudy
" 5	30·00	S.W.	.	70	67	57	59	61	Overcast
" 6	30·08	S.W.	.	123	77	55	59	64	Fine
" 7	30 15	W.	.	81	68	59	60	64	Overcast

During the week marked copies of the following newspapers have been received:—*Bradford Times, Bournemouth Daily Echo, Worthing Mercury, Weekly Record (West Indies), Port of Spain Gazette, Hertfordshire Mercury, Westminster Gazette, Daily News, Hyde Reporter, Reading Mercury, Local Government Chronicle, Liverpool Daily Post, Aberdeen Free Press, Ipswich Times, Coventry Herald, Windsor and Eton Express, Cardiff News, Surrey Advertiser, Birmingham Daily Mail, Literary Digest (New York), Scientific American (New York), &c.*

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The Croonian Lectures

ON

BRIGHT'S DISEASE AND ITS VARIETIES.

Delivered before the Royal College of Physicians of London on June 7th, 9th, 14th, and 16th, 1904,

By JOHN ROSE BRADFORD, M.D., D.Sc. Lond., F.R.S.,

FEI [illegible] RINCIPLES AND [illegible] PHYSICIAN [illegible] DON.

LECTURE I.

Delivered on June 7th.

Physiological Considerations.

Mr. President and Gentlemen,—My first duty is to tender to you, Sir, and to the College my best thanks for the honour you have conferred on me in requesting me to deliver these lectures although I have many misgivings as to my capacity to deal adequately with the subject. The subject of Bright's disease is not only one peculiarly associated with English medicine and more especially with the names of Bright, Wilks, Roberts, Grainger Stewart, and many others, but it is also such a prevalent malady that I feel no apology is necessary for bringing it before you. Further, at the present time there is a great deal of confusion not only as to the fundamental problems connected with this disease, such as, for instance, its etiology, but also there is much diversity of opinion amongst different writers as to what renal affections should be included under the term Bright's disease.

The problem of the causation of disease is usually a far more complex one than the mere description of a malady. The fact that such widely differing conditions as amyloid degeneration, so-called chronic nephritis, granular kidney, and even such an affection [illegible] all be described by some und[illegible] is an index of the confusion [illegible] in this department of medicin[illegible] recognised by some that the term Bright's disease is no longer applied by them to a definite anatomical condition but is used much in the same way as the term diabetes is employed, or will be shortly—that is to say, as a symptom-complex or as the name connoting a number of symptoms or a certain clinical picture rather than a single morbid entity. Other writers consider the term Bright's disease and nephritis as interchangeable and talk of Bright's disease as chronic nephritis in one or another of its various forms. The number of affections of the kidney which may be included under the terms nephritis and Bright's disease is, however, so considerable that nothing is gained by including them all under one term either of nephritis or of Bright's disease. This is more especially true, not only on account of the mere number and variety of the different lesions, but also because they really differ very considerably in [illegible] sibly in their etiology. Quite ap[illegible] sentiment or those which us[illegible] in other branches of knowledge—viz., the priority of a given name—there are, in my opinion, sound reasons for maintaining the term Bright's disease. At the same time the group of cases to which this [illegible] ely limited one, characterised [illegible] y but more especially by the [illegible] the affection.

Bright's disease is usually looked upon as an affection of the kidneys, although perhaps it may be considered doubtful whether the lesion is one really limited to these organs. It has been rather too readily assumed that all the multifarious effects of Bright's disease on the circulation, such as the occurrence of dropsy and the [illegible] marked cardio-vascular lesions such as cardiac [illegible] and the well-known changes in the arteries, are e[illegible] explained as effects produced secondarily by an [illegible] lesion. To express it more accurately the view has been [illegible] on the disordered [illegible] not only been held [illegible] scular accompani[illegible] h reference to the nervous phenomena so common in Bright's disease. Although the details as to the nature of uræmia are not clearly understood nearly all writers on the subject consider the condition a toxic one and they associate the toxic state solely with the deficient excretory activity of the kidney. Thus it comes about that the widespread effects which we associate with Bright's disease, and especially with chronic Bright's disease, such as the dropsy, the cardio-vascular changes with all the evils that follow in their [illegible] ation the various secondary and [illegible] and all regarded as dependent [illegible] the excretory function of the kidneys. This is unquestionably one of the problems lying at the root of the pathology of Bright's disease and no doubt in a certain sense all these effects are due to the renal lesion, or perhaps it would be better to say are associated with some variety of renal lesion. But it is perhaps doubtful whether in the present state of our knowledge we are justified in looking upon all these widespread effects as a result of a cause or causes acting entirely on, and producing results only in, the kidneys.

A great many of the difficulties that have arisen in interpreting the phenomena of Bright's disease and other affections of the kidney have been due to a want of complete accord between the known facts as to the physiology of the kidneys and certain phenomena observed in disease of these organs. This has been especially the case in many of the discussions that have taken place with regard to the nature of uræmia. The same difficulties have also presented themselves in connexion with other phenomena of renal disease such as renal dropsy and the very extensive cardio-[illegible] many kidney diseases. Throughout [illegible] may be said that our knowledge [illegible] aries directly with the extent of our knowledge of the physiology of the organs concerned. [illegible] is done to the progress of [illegible] ansference of physiological [illegible] biology which is known as medicine. All the same advances are made through the intermediation of pathology. In some instances the first gleams of our knowledge of the physiology of certain organs have been derived from the study of clinical medicine but it is only when these have been extended and more accurately [illegible] y and later by [illegible] edicine has been [illegible] pendence of the three branches of knowledge, [illegible] medicine, is afforded by the hist[illegible] functions of the cerebral corte[illegible] localisation was obtained by the [illegible] Hughlings Jackson. The work of the physiologist added that definiteness which after all can only be obtained by the experimental method and at the present time the more or less minute and accurate knowledge that we possess of the functions of the cerebral cortex is at any rate very largely due to the work of the pure physiologist. The history of these discoveries, however, shows amongst other things the very great results that can be obtained from the study of medicine by the clinician with the aid of truly scientific methods.

Addison's disease may be quoted as an example of a malady where almost the whole of our knowledge is derived from the study of pathology and the unsatisfactory state of our knowledge as regards the nature of this disease may perhaps be said to be largely dependent on the want of full knowledge of the physiology of the suprarenals. The great discovery of the internal secretion of these organs elucidates, no doubt, part of the pathology of Addison's disease, but a part only, and until the physiology of the cortex of the organ is ascertained or possibly some hitherto unknown other function our knowledge of the pathology of Addison's disease will remain incomplete. Many other illustrations of the mutual interdependence of physiology, pathology, and medicine might be quoted but probably all will agree that where our knowledge of the physiology of an organ is scanty there also our conceptions of the diseases affecting the structure [illegible] certain, and it is owing to the numerous [illegible] in medicine that so many look upon [illegible] truly scientific study; that, however, [illegible] subject but on the bent and training of mind of those who pursue it.

In the case of renal diseases, and more especially perhaps in Bright's disease, as stated above, many of our uncertainties as to the interpretation of the phenomena seen in the course of disease depend very largely on some of the

in birds. It would not seem to be probable that a function which is discharged by the liver in one set of vertebrates, such as birds, would be discharged by another organ, such as the kidney, in another set of vertebrates, such as mammals, and therefore it is improbable that the kidney is the seat of the formation of uric acid in mammals and in man. Another reason, doubtless, that has led to the hypothesis of the formation of uric acid in the kidney is the fact that a somewhat allied body—hippuric acid—may unquestionably be formed, thanks to the activity of the renal protoplasm, so that it cannot be denied that apart from the true excretory function of the kidney this organ is capable of affecting syntheses, such as the union of benzoic acid with glycin. This action of the renal cells is, however, not limited to them and may also be effected by the protoplasm of other cells—e.g., the liver. It will thus be seen that there is really but little, if any, evidence in favour of the view of the kidney having a special secretory activity, although perhaps it would be unwise to deny the possibility of it. Many substances taken into the body, as, for instance, certain drugs like chloral and carbolic acid, are excreted in the urine in combination with complex acids like glycuronic acid and sulphuric acid. But there is no evidence that this union or conjugation takes place in the organ itself.

Another problem in relation to the physiology of the kidney which has a most important bearing on the pathology is the question as to whether the kidney is provided with an internal secretion, and the most divergent views have been held with regard to this. It may be said that the conception that the organ has an internal

the phenomena of acute uræmia as seen in the case of scarlatinal nephritis and the latent uræmia accompanying calculous obstruction are so great that it is not surprising that many observers have thought that the explanation of these differences is to be found in the hypothesis of an internal renal secretion. In the scarlatinal nephritis or other destructive disease of the kidneys both of the supposed functions of the organ would be arrested, whereas in calculous or other forms of obstruction only the external secretion or excretion. This doubtless might be a ready and simple explanation of the supposed facts. Additional evidence in support of the same view was supposed to be afforded by the earlier experiments of the results following double nephrectomy on the one hand or ligature of both ureters on the other in animals. Speaking broadly, the effects of double nephrectomy were more violent and more rapid in their course than those seen after ligature of both ureters and it was supposed that owing to the severity of the vomiting in the first group of cases there was a greater resemblance to uræmia as seen in the human subject.

The question of the existence or non-existence of an internal secretion is one that must be determined solely by physiological methods and before its existence can be admitted the same kind of evidence must be available in the case of the kidney as in the case of other glands. This evidence may be said to consist usually of three parts. In the first place a gland that is provided with an internal secretion usually presents distinct histological evidence in support of the existence of this function. Thus in the case of the thyroid not only can the colloid material actually be seen
organ but in addition the
own parathyroid tissue are
the gland. In the case of the pancreas certain definite structures known as the islands of Langerhans are found in the substance of the gland, although it must be admitted in the light of Dale's observations that possibly the connexion of these cells with the internal secretion of the organ is not so direct as has been supposed. In the case of the liver, although there may not be histological evidence in the ordinary sense of the word, yet the staining of the organ reveals the presence of glycogen in its substance. In the second place, where an internal secretion is unquestionably present the results of removal of the gland in question are different from those seen from the mere ligature of its duct where the gland is one provided with a duct. This is notably the case with the liver, the pancreas, and the testis. In all these three instances there is no sort of resemblance between the phenomena produced by ligature of the duct and those produced by extirpation of the organ. In the third place an extract can usually be obtained from glands possessing an internal secretion which frequently contains certain definite chemical substances and which may have very marked physiological and even th
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peutic action and even the nature of the substances are not thoroughly known and this, perhaps, is especially the case with the pancreas and the testes, but the phenomena following the excision of the gland are so strikingly different from those seen after ligature of the duct that no doubt can be entertained of the real existence of an internal secretion.

When we turn to the kidney the facts obtained by experiment are very different and present considerable difficulties in their interpretation. If the organs are removed by the modern methods of aseptic surgery, and especially if the two kidneys are not removed at one operation but one after the other with a considerable interval, the effects produced are very different from those seen by the earlier experimenters and in my opinion no marked distinction can be drawn either as regards the duration of life or as regards the symptoms produced by double nephrectomy on the one hand or by ligature of both ureters on the other, or by nephrectomy on one side and ligature of the ureter of the remaining kidney. In all these conditions the most marked effects produced by the operation are a progressive weakness, refusal of food, a great fall in body temperature, some dyspnœa, diarrhœa, great wasting, occasional vomiting (this last symptom sometimes is absent), and death usually occurs on the fourth day. In the course of many experiments I have never seen any clinical symptoms presenting any close resemblance to those seen in acute uræmia in man, such symptoms, for instance, as severe vomiting, convulsions, or coma. It might, perhaps, be further added that the same train of symptoms is also seen where the functions of the kidney are arrested by ligature of the vessels in the hilum. Two deductions of some importance are to be drawn from the results of such experiments. In the first place, the symptoms and mode of death are similar, whether the functions of the kidney be arrested by double excision, by double ligature of the arteries, or by obstruction of both ureters. Secondly, these symptoms and the mode of death present a greater resemblance to those described in the human subject as latent uræmia than to those described as ordinary uræmia complicating acute or chronic renal disease.

The structure of the kidney does not yield any evidence of the existence of any groups of cells that might be supposed to yield an internal secretion, such as are found, for instance, in the pancreas or in the testes. At the same time this is, perhaps, not an argument of much weight because the liver undoubtedly is provided with an elaborate internal secretion, but yet this could scarcely be deduced from the histology of that organ. The most convincing evidence in favour of the existence of an internal secretion has in many instances been afforded by obtaining an active extract from the gland in question, so that the results of experiment with renal extract are those to which we would perhaps turn in order to clear up the difficulty as to the existence or non-existence of an internal secretion. Unfortunately, the evidence under this head is of an inconclusive character, different observers having obtained discordant results. Brown-Séquard, as is well known, was of opinion that most of the glands of the body possess internal secretions and in 1889 he advanced the view that the kidney was provided with an internal secretion
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the supposed beneficial
influence of renal extracts in the treatment of the so-called experimental uræmia and also of the ordinary uræmia seen in renal disease. Brown-Séquard's experiments were performed on nephrectomised rabbits and guinea-pigs and he stated that as a result of treating these with renal extract the period of survival was slightly longer than in the controls. Meyer in 1894 repeated these experiments, experimenting both on dogs and on rabbits, and he used a glycerine extract of the kidney of the dog for the purposes of treatment. Meyer found that after double nephrectomy Cheyne-Stokes respiration became developed in some 36 hours and he stated that the injection of some 20 cubic

centimetres of the renal extract caused the subsidence of the Cheyne-Stokes breathing, at any rate temporarily. He did not, however, obtain any very marked prolongation of life. Meyer also observed that venesection after double nephrectomy, followed by the transfusion of small quantities of defibrinated blood, also led to the disappearance of the Cheyne-Stokes rhythm. In a further series of experiments, instead of transfusion with ordinary defibrinated blood, he used defibrinated blood obtained from the renal vein and he stated that the improvement or temporary subsidence in the symptoms was in these circumstances of a more prolonged character. Meyer finally concluded that the blood of the renal vein contains some material elaborated by the kidney and capable of exercising a beneficial influence on the toxic state produced as a result of double nephrectomy. Vitzow performed somewhat similar experiments in dogs and rabbits and he also claimed that the injection of blood from the renal vein of healthy animals led to the prolongation of life in the nephrectomised animals. Two Italian observers, Ajallo and Parascandallo, were also of opinion that the injections of renal extract after double nephrectomy caused some prolongation of life. Tiderstedt and Bergmann adduced some experimental evidence to show that the extract of the cortical substance of the kidney had a vaso-constrictor action on the blood-vessels. This observation was contradicted by Lavandowski, inasmuch as he failed to obtain any effect on the circulation with the injection of renal extract and he came to the conclusion that an internal secretion did not exist. Dieulafoy, Tessier, Frankel, and many others have recorded cases in which the injection of renal extract in the human subject in cases of uræmia has been followed by a considerable increase in the flow of urine, together with a subsidence of the uræmic symptoms. De Lignerolles has used a serum obtained from the renal vein of goats in doses of some 20 cubic centimetres in the treatment of four cases of uræmia in the human subject and he states that in three cases there was very considerable improvement not only in the general condition of the patient but that the improvement was also shown by a diminution both of the toxicity of the urine and also of the amount of the albuminuria. Chatin and Guinard, in reviewing the literature in 1900, considered that on the whole there was definite clinical evidence of the beneficial effects of the treatment of uræmia by renal extract, although they acknowledge the very numerous sources of error owing to the great and sudden improvement that may ensue in uræmia as a result of other methods of treatment.

It is, of course, obvious that the treatment of uræmia by renal extract, even if the kidney possesses an internal secretion, cannot possibly meet with the same measure of success as is the case in the treatment of myxœdema with thyroid extract, inasmuch as the thyroid is not known to possess any other function, whereas in the case of the kidney it is impossible for life to be maintained when the excretory function is abrogated or seriously impaired. Stern, in 1903, reinvestigated the whole subject and made a complete series of observations on a large number of animals. In his first series of observations nephrectomy was done in two stages and the animals were treated with subcutaneous injections of a watery renal extract. Such animals, however, did not survive longer than the controls. In the second series the ureters were ligatured in place of the kidney being excised and here his results coincide with mine inasmuch as he found that the period of survival was no longer than in the controls in which double nephrectomy had been performed provided that the double nephrectomy was performed in two stages in order to eliminate shock as much as possible. In a further series of observations Stern injected an indifferent fluid, such as 0·8 per cent. of sodium chloride, after double nephrectomy, and in order further to control these results he injected in a certain number of control animals equivalent quantities of renal extract. As a general result of his observations he found that the animals treated with physiological salt solution might survive for considerably longer periods than those simply nephrectomised. A rather remarkable observation was the fact that in many instances more prolonged survival was seen in the animals that received the largest injections. Stern considers that dogs do not as a rule survive double nephrectomy more than 70 hours, but if treated with large quantities of physiological salt solution the survival may be prolonged to 90 or even 132 hours. He further draws attention to the fact that where vomiting and diarrhœa are marked symptoms the duration of life is more prolonged. Stern considers that his experiments do not afford any evidence in support of the existence of an internal secretion and that the variability in the duration of life after double nephrectomy depends to a certain extent on the variable degree of resistance of individual animals to toxic agents and that the beneficial effects of the injection of salt solution are probably merely dependent on the dilution of the toxic materials in the blood and possibly to their elimination by other channels and more especially the bowel. Stern's results are not only of theoretical interest but it is possible that the injection of large quantities of saline solution might be of use to prolong life in some forms of uræmia where there is a possibility of the renal functions becoming re-established. It has long been known in medicine that temporary improvement in the uræmic state might be induced as a result of venesection followed by transfusion. It is possible, however, that beneficial results on the lines of Stern's experiments might be obtained in cases of latent uræmia associated with complete suppression, calculous or other, where the prolongation of life by means of these injections might turn the scale in favour of the patient.

It will be seen that there is really at the present time no conclusive evidence in support of the existence of an internal renal secretion. On the other hand, the results I brought before the College in 1898 in the Goulstonian lectures show that there is some obscurity as regards the functions of the kidney, as it is impossible to explain the general disturbance of nutrition accompanied by marked wasting and the notable increase in the excretion of urea seen after removal of portions of the kidney as simply dependent on some deficiency in its excretory activity. These observations showed that the formation and excretion of urea were certainly controlled in some way by the amount of kidney substance present inasmuch as animals possessing one-third of their initial kidney weight were capable of living for indefinite periods, showing no other symptom of disorder than an increase in the amount of urinary water, whereas when but one-fourth remained death occurred associated with an increased excretion of urea together with great wasting. There is unfortunately no further evidence to explain the mode of production of this metabolic disturbance.

In concluding a review of the physiology of the kidney in so far as it affects the study of pathology and medicine it will be convenient to emphasise the similarity that really exists between the experimental results and those seen in the human subject as a result of disease. The fact that suppression of the functions of the healthy kidneys in animals is not really followed by the development of ordinary uræmia is one that I have not only emphasised in these lectures but also [illegible] of the renal arteries, double nephrectomy, [illegible] both ureters, although diverse proceedings, are all followed by the same result and produce, as mentioned above, symptoms which are more comparable to those seen in calculous obstruction and described as latent uræmia in the human subject than to the acute uræmia seen in other renal diseases. The view has, however, been held in human medicine that this clinical picture known as latent uræmia is characteristic specially of calculous obstruction. I would, however, urge that this is not really the case and it is simply that calculous anuria is the most common condition in which it is seen owing to the frequency of this malady and a precisely similar clinical picture is seen in quite a number of other renal conditions. Thus there are obscure conditions where the excretory function of the kidney is entirely arrested as a result of some supposed reflex irritation, and one such case I recorded in my Goulstonian lectures where complete suppression ensued as a sequel of a peculiar form of gangrenous cystitis and yet where there was no obvious disease of the kidney to account for the complete suppression. This patient presented symptoms precisely similar to those seen in ordinary complete calculous anuria. Thirdly, obstruction of the renal arteries, doubtless a very rare condition, an instance of which was recorded by Mr. Lawrence and myself, again produced the same clinical symptoms. Fourthly, somewhat analogous symptoms associated with complete suppression may occasionally be seen in diphtheria but here vomiting is, perhaps, more apt to be present and in some instances, owing to the production of well-marked renal disease, the effects are more comparable to those of ordinary uræmia. Lastly, I have recently, through the courtesy of my colleague, Mr. Godlee, had an opportunity of seeing the specimens from a case where the symptoms presented were again those characteristic of calculous obstruction but where the lesion was an acute hæmorrhagic nephritis. The consideration of all the experimental and these pathological results, I think, justifies the conclusion that the suppression of the functions of the healthy kidneys in man or in animals produces a set of symptoms that should be spoken of as those of latent uræmia and not those of ordinary acute, subacute, or chronic uræmia.

A Clinical Lecture

ON

REMISSIONS AND RELAPSES IN INSULAR SCLEROSIS.

Delivered in the National Hospital for the Paralysed and Epileptic, Queen Square, on Feb 9th, 1904

BY THOMAS BUZZARD, M D, F R C P LOND,
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GENTLEMEN,—IT is known that in a very considerable proportion of cases the course of insular sclerosis is marked by more or less frequent remissions and recurrences of symptoms. The fact was recognised by Charcot and has been mentioned also by succeeding writers, but to my mind sufficient prominence has very seldom been given to this interesting and exceptional feature of the disease. It has appeared to me worth while, therefore, to devote a lecture to the subject and thereby perhaps to aid in drawing more particular attention to a peculiarity of the disease which may be found to bear with some importance upon its diagnosis and it is conceivable also upon the question of its etiology. This feature is illustrated by the case of a female patient in attendance.

The patient is a married woman, aged 36 years who was admitted into the hospital under my care in September, 1900, complaining of loss of power in the left leg weakness across the loins, a general feeling of weakness, numbness of the fingers of the left hand and weakness of the bladder. Such were the symptoms which she herself described. Others were brought out upon examination, and we shall come to them presently. She said that her illness had lasted about 18 months, but on further questioning her it appeared that this short period by no means really represented the duration of her disorder. 12 years previously, in September 1888, one year before her marriage, she had complained of numbness in the soles of the feet which 'felt as if they were asleep.' This lasted for a week and then passed off entirely. In September, 1889 about the time of her marriage, numbness in the feet recurred and this time it extended to the calves of the legs and lasted for about three weeks. Again it passed away completely. In Augus
first time she again suffere
extended from the knees to
time she had double vision
side of the face, described by her medical adviser as Bell's paralysis. These symptoms lasted about a month and then quite cleared off under treatment. In 189 just as she was pregnant for the second time she again had an exactly similar attack upon the left side of the face, which also lasted for a month. About the same time she likewise noticed some numbness in the fingers of both hands. This has never quite left her since but has varied in degree from time to time. With the exception of this numbness which was so slight as to cause her no practical inconvenience and indeed scarcely to attract her attention, she remained completely well till December 1895, a period of some three years. She was then confined for the third time and three or four months later had to seek medical assistance on account of numbness and loss of feeling in the hands and arms so that "she could not sew or peel potatoes." She also had some loss of power in the left knee and for two months was unable to walk. After being away in the country for a time she became practically well again in all respects. And so she remained until April, 1899, when, being again pregnant, she complained of heaviness in the legs and some weakness across the back but no numbness on this occasion. The child, a healthy one, was born in September but after her confinement she continued to become weaker and to complain of a 'heavy pain' across the loins. At the same time she first began to notice some precipitancy of micturition. In 1900 her walking power diminished and she fell and was unable to draw up her left leg, the ankle and knee being stiff, and on admission here she could not walk without assistance. The bladder trouble, too had been worse and there had been occasional incontinence of urine. There had been no further diplopia. The following note refers to her condition in November, 1901 when she was shown by me at a lecture in this theatre. The patient is well nourished, of placid, easy going disposition, cheerful, but not especially emotional. *The bright but rather vacant expression is very suggestive of* that which is so often noticed in cases of insular sclerosis, but mentally she is intelligent, with good power of memory and attention. There is no articulatory difficulty. The ocular movements are good, but extreme lateral rotation is not well sustained to her right and when the eyes are turned to her left a few slow jerking movements are remarked, of a nystagmoid character. The jaw movements are equal and powerful on the two sides. There is no affection of sensibility in the face. There is no abnormality in the districts of the ninth tenth and twelfth nerves. In the upper extremities we find all movements powerfully performed and it may be said that there is no marked intention tremor but when by request she touches the tip of her nose it is noticed that there is a slight wavy motion of the finger as it nears the face. In the lower extremities we find on the right side all movements present and power good. There is a little incoordination but no rigidity. On the left side the muscles are equally well developed but their power is much less and there is a great deal of spasticity. Dorsiflexion of the ankle is practically absent. Her gait is spastic especially in the left leg, which is moved much like a hemiplegic limb. There are subjective numbness in the fingers, especially of the left hand, heaviness and dull pain across the loins but no definite girdle sensation. Objectively there is no change to tactile stimulus. There is marked loss of sensibility to pain in the left leg as compared with the right not quite constant, and extending from the foot (not including the sole) to above the knee without any definite limits. As regards reflex movements there is brisk jaw jerk, the supinator jerk is in excess on the right side the triceps jerk excessive on the right, absent on the left. The knee jerks are both equally in excess and ankle clonus is present on each side. The plantar reflexes are both brisk and show extensor (Babinski) response. There is precipitate micturition with occasional incontinence of urine. Examination with the ophthalmoscope shows both discs rather pale especially in the temporal half of each and the left is more pale than the right, the vessels are of good size. The field of vision both to colours and light *is somewhat restricted concentrically in the left eye*.

The patient for the last two years has been at home but attends to-day at my request. Her walking power since the above note was taken has much diminished and there is now some spasticity in the right lower extremity as well as in the left.

I have entered into what is perhaps a somewhat wearisome detail of this case because it is one which manifestly strays from the commonly recognised type of insular sclerosis. Yet it is clear that this affords the only reasonable solution of the symptoms shown in the patient's history and present condition. In no other way can we explain the presence of such symptoms as transitory numbness, diplopia, short lived but recurrent facial paralysis loss of power with spasticity of gait, ankle clonus the Babinski phenomenon, and pallor of the optic discs. This then is a case of insular sclerosis which well illustrates the importance of recoveries and relapses as a symptom of the disease. There is no doubt that not only have recoveries such as have occurred here been in many cases the cause of a patient's illness being lightly treated as one of hysteria but also in my judgment, the common picture of hysteria has been somewhat largely based upon a misinterpretation of such symptoms.

Another example is that of a man aged 35 years tailor married who was first admitted under my care in April 1895 with not strongly marked symptoms of insular sclerosis. It seemed that in 1881, when 21 years of age he suffered from some hemianæsthesia from which he rapidly and completely recovered and remained well till 1894. He then complained of numbness tingling, and weakness in both hands and feet

From this he recovered in a fortnight and returned to his work. About a year later he was again attacked with numbness in both feet and slightly in the hands, together with some weakness in both lower limbs, especially the right. There was also some slight bladder trouble. He had to give up work and was eventually admitted into this hospital. He had then distinct weakness in the right upper and slightly also in the right lower limb. There was loss of sensation, both to touch and pain, in front of each thigh. The knee-jerks were in excess. After a few weeks he had improved and was able to leave the hospital, walking alone. After his discharge he continued to improve and was apparently quite well in a month or two. He remained well and steadily at his work for nearly three years. In 1898 he began to be weak in the legs again but remained at work till June, 1900. He was then much worse and could not walk without help but after three weeks' stay in a convalescent home he improved greatly and returned home, but still continued to suffer from numbness and stiffness of the fingers which interfered with his work. He again became worse and was readmitted into this hospital in January, 1901. I will only refer to a few salient points of his condition at that time. There was a little "intention" tremor in the arms, especially on the right side, and he was clumsy in both hands in picking up a pin. The right leg was weaker than the left, especially in dorsiflexion of the foot, and there was some rigidity on both sides, with incoördination of the right foot. His gait, too, was unsteady and of the spastic-ataxic type. The wrist and knee jerks were in excess, but there was no ankle clonus. The plantar reflexes were brisk, with extensor (Babinski) response. Patches of anæsthesia were found about his trunk and legs. This patient steadily improved in hospital at first, and the anæsthesia practically disappeared. After being discharged he again had a relapse and was unable to walk. There were marked increase in the spasticity of his legs and some return of anæsthesia. After keeping in bed for a short time he improved, but still showed an ataxic gait with some spasticity. He was discharged in May, 1901. At the present time he is under treatment in another hospital. On inquiry I have ascertained that he cannot stand without support or guide his hands. Work has been impracticable for four years past. (By the courtesy of hospital colleagues other cases illustrating the subject were shown.)

It is evident that the extreme irregularity which characterises the distribution of the patches of sclerosis in different examples of the disease under consideration makes it quite unreasonable to expect the same degree of uniformity in the symptoms that we are accustomed to find when sclerosis is of the "system" type, as, e.g., in tabes. It is by comparison of numerous examples, some of them verified by post-mortem examination, as well as by consideration of the effect which a sclerotic patch will be liable to produce when occupying any particular locality, that the ability to classify such cases as these under the name "insular sclerosis" is attained. The "symptom-complex"—to employ the rather unwieldy expression borrowed from the German—or "syndrome," to use the term employed by the French—the peculiar aggregation, that is, of the symptoms, points, I think, conclusively to this explanation of the cases.

In the course of private practice I have met with many examples—some of which have been already published[1]—of the tendency to remissions and relapses in insular sclerosis. Let me refer, though very briefly, to a few more of these, because in a subject of this kind a description of incidents occurring in concrete examples is more striking than any abstract statements.

CASE 1.—A woman, aged 33 years, whom I saw about a month ago, had an attack of influenza in 1895. Shortly afterwards she squinted and lost the use of her right hand and arm—i.e., although able to move it she could not use it for lifting things or dressing. She also lost feeling in it. At that time she dragged one of her feet, although she was not conscious of loss of power in it. The trouble in her limbs described lasted for about a month and then improved, although she did not quite regain the power. She had been very much improved for about a month when she relapsed and this time both right arm and leg were affected. For three weeks she was very helpless and stayed in bed for the most part. She then began to improve and perfectly recovered in the course of some months. From that time (between seven and eight years ago) she remained perfectly well until June, 1902, when, as she describes it, the right arm began to be weak and the weakness spread to the right hand. Just as happened before, she again became practically helpless in this limb and the leg was also affected to a certain extent. She went to the seaside and after a month had quite recovered. She remained well for a month and then felt her leg losing power again, and although keeping about she had great difficulty in walking. The right arm, too, was slightly weaker but she was able to use it. On the first attack eight years ago there was some difficulty in restraining the action of the bladder and this difficulty recurred in the last attack. There is now some weakness of the right limbs with attempted ankle clonus. On the occasion of my examination I failed to elicit any plantar reflex.

CASE 2.—A woman, now (1904) aged 48 years, lost the sight of her right eye in less than a week when 23 years old. At its worst she could not perceive light. It gradually recovered completely. A few years later she had transitory tingling in the right arm and weakness in one ankle, which passed off. About 1894 there were loss of power to hold a pencil and dragging of the right leg, from which she also recovered. I saw her in 1898 when the right leg was very useless and she could only walk with help on each side. In reply to my recent inquiry her medical attendant reports the legs spastically paralysed, especially the right, presence of the Babinski phenomenon, and very feeble grasp of the hands.

CASE 3.—A woman, aged 22 years, was in excellent health till February, 1899, when vision with the left eye became indistinct and she had headache and giddiness. The left hand and arm were numbed and she could not walk properly, the right leg especially being weak. In April, 1899, an ophthalmic authority found vision on the right side $\frac{6}{6}$, on the left $\frac{6}{60}$, both eyes emmetropic, and the fundi normal. The diagnosis given was "functional derangement of nerves at the back of the eye." In April, 1900, I found right vision = $\frac{6}{6}$, left vision = $\frac{6}{6}$. The fundi were normal. There was nystagmus. She complained of "pins and needles" and numbness in both hands and below the left knee; she could walk a mile but would then be tired. There had been inability to hold a pen but she could now write. The plantar reflexes showed extension (Babinski) movement. I thought that she had suffered from retro-ocular neuritis in the course of insular sclerosis. Under observation in London she greatly recovered her health and her medical attendant wrote me a year or more later, "I am glad to tell you that she is doing well, hunting, and driving about in her old dashing style, and they speak of her as being 'quite well now.'" A few days ago I heard that she had had no return of the numbness or loss of power in her limbs, and that she was able to take riding, driving, and walking exercise, though in riding she had not regained the full grip of the saddle. It is, I suppose, possible that there may be no new developments in this case, but in view of what so commonly happens one cannot be at all free from apprehension that a relapse may some day occur.[2]

CASE 4.—A woman, in 1894, suffered from weakness and tremor in her legs, for which she had to keep her bed for some days. From this she recovered perfectly and remained well till 1897, when she began to lose strength in her legs and fell on several occasions. Four months later I found some spastic paraplegia, weakness of the sphincters, excessive knee-jerks, ankle clonus, and pallor of the left optic disc. The vision = $\frac{6}{12}$; there was some intention tremor of the hands.

CASE 5.—A woman, aged 31 years, whom I saw in 1901, suffered from an illness at 13 years of age, in which she had double vision and squinting, and staggered in walking. After two or three months she quite recovered, Three years later the sight of the left eye became bad and an ophthalmic authority who examined her is said to have expected that she would become blind, but great improvement occurred and the vision with that eye I found to be g though the disc was distinctly atrophic Diplopia had since occurred for several weeks at a time on three different occasions A few years ago however she was so well that she walked ten hours a day in Switzerland After this there was for a time some loss of power in the right leg More recently the left leg became weak and still remained so when I saw her She presented besides the eye symptoms mentioned a characteristic staggering gait, excessive knee jerks extension (Babinski) movement in the plantar reflex on both *sides and slight nystagmiform jerking At times she had* had numbness in her hands with *inability to use them* properly but that was not now the case Some time after my examination I learned that she had again recovered her health and had married I am unable to report her present condition

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[1] Simulation of Hysteria by Organic Disease of the Nervous System. Churchill, 1891. Clinical Lecture on Insular Sclerosis and Hysteria. THE LANCET, Jan. 2nd, 1897, p. 1.

[2] Since this lecture was sent to press I have had the opportunity of once more seeing this patient. She looks the picture of health, and is studying in a school of art. On examination I note the following. Her upper extremities are absolutely right; there is no numbness or "pins and needles" in them, and she is able to draw with a perfectly steady hand. If she walks much the "*feeling seems to go in her left knee and leg.*" Two years ago she could dance well but of late this has been quite impossible, owing to extreme giddiness. Holding the head down causes giddiness. During last winter she hunted, but owing to her want of grip, especially with the left leg, in jumping she *had to rely very much upon her balance instead of depending upon the* crutch. The plantar reflexes are of the extensor (Babinski) type. During the last year or so there has been a return of the visual difficulty which, according to her account, had entirely subsided and I now find V. R. = $\frac{6}{5}$, L. = $\frac{6}{24}$ with paracentral scotoma. She has no diplopia. Both discs are pale in the outer part, especially the left.

CASE 6—A woman aged 36 years was sent to me in April, 1899 suffering from loss of power in both legs, back hands and arms a *staggering gait*, and *stiffness* from the hip to the knee The knee jerks were excessive ankle clonus was present on each side with marked extension (Babinski) response in the plantar reflex There was nystagmus and also atrophy of the left optic disc The history was that she had been particularly healthy and exceptionally strong muscularly until 1890, when she suffered from two attacks of influenza After being in bed for ten days in the second attack there was some loss of power and sensation in her legs After this although she recovered her general health completely *she thought that she never seemed to regain the* spring' in her walk but at times she was *so much improved as to* be unconscious of anything being wrong After this there appear to have been several relapses and remissions At one time there was involuntary escape of urine and fæces but this passed off in six weeks For one and a half years she had complained of diminished sight of the left eye and latterly that of the right had not been strong During the nine years of illness her case had been always diagnosed as one of hysteria except by the last medical man consulted who recognised its nature and sent her to me In 1901 I *received from him the following in reply to my inquiry as to* the sequel of the case The mother was so annoyed at me for saying it was not hysteria and at you for supporting me that she removed the case out of my hands I have made inquiries among some of the relatives but can get no information except that the symptoms had slowly increased and she died of exhaustion about 15 months ago

Here I am tempted to quote from some notes of a case which I took in May 1868 at a time when this disease had been I think scarcely differentiated and when certainly I knew nothing about it

CASE 7—The *patient a man aged 41 years had never had* syphilis or any severe illness or trauma 23 years ago he found himself one day lame in the left leg with twitchings in it and a feeling as though it were asleep In a fortnight he was quite well and remained so for three or four years Then he had a second attack like the first which lasted also about a fortnight when he returned to business A few years later he had another attack of similar character and has never since quite regained the power of the left leg Two years previously he felt some numbness of the left hand He has never had pain in the leg but of late a little walking even for half a *mile would exhaust him utterly* A few days previously he felt for the first time powerlessness in the right leg with numbness There was also diminished grasp of the right hand and for several days he had headache and lost power rapidly in his limbs and back For the last few days he had been getting better again In the morning his left leg was stretched out and he could not bend it The grasp of the right hand was fair, that of the left was [illegible] es failed to lift the [illegible] sed them to act fier [illegible] exalted (The Babinski phenomenon was evidently present) Sight had been hazy during the last few months The expelling power of the bladder was not great and he could not hold his urine to a great extent I do not know the sequel of this case which was evidently, however *one of the class* which we are considering

CASE 8—To complete the picture let me now quote notes of a case which was under my care in this hospital many years ago the diagnosis of which was confirmed by necropsy In May, 1885 a female, aged 27 years previously in perfect health, fell upon her hands whilst *running and* rose with great difficulty on account of extreme giddiness which had doubtless occasioned her fall In a few minutes she recovered and for a week had nothing to complain of then her sight became indistinct she had diplopia and pain at the top of the head She attended here as an out patient and gradually lost her symptoms In February 1886 she was suddenly unable to walk and lost power also in her arms Two months later she could not stand There were difficulty in micturition and occasional leakage of the bladder Admitted as an in patient in July, *1886 she lay in bed with but little power of moving her* limbs *There was some anæsthesia of the lower extremities* The knee jerks and plantar reflexes were present, there was no ankle clonus Later she suffered from spastic rigidity of the legs marked interosseal muscular atrophy of the hands, absence of knee jerks acute bed sores bladder trouble and she died in November from gradual heart failure after constant vomiting From first to last her illness occupied just 18 months Post mortem examination showed on the posterior surface of the cord just above the lumbar swelling beneath the pia mater a slightly raised rather dark looking patch On each side of this was a black looking vein filled with clot, contrasting with the almost empty pink looking veins elsewhere Section showed soft greyish looking tissue replacing in part the white and grey substance of the cord Sections through the lumbar cord showed in some parts of the anterior and lateral columns grey semi gelatinous patches In the mid dorsal region the whole transverse area of the cord flowed out on section having an opaque grey colour In the *mid cervical region sections showed grey gelatinous patches occupying various portions of the axis*

In the present state of our ignorance regarding the etiology of insular sclerosis there is no advantage in disguising the fact that we are unable to point to any mode of treatment which appears to influence the progress of this disease It becomes then a question of considerable importance whether the remarkable tendency to the occurrence of remissions and relapses in its course is calculated to throw any light on the mode of its causation As it seems to me the most likely view (and possibly that which finds most favour) is that *in insular sclerosis the essential cause is the presence* in the blood vessels of an infective agent which sets up an inflammatory process in the interstitial tissue This may occur at any part of the cerebro spinal axis On the other hand it has been suggested that the pathological process is essentially dependent upon some congenital abnormality I am disposed to think that such an explanation must be set aside The grossness of the anatomical findings alone would seem to be inconsistent with such an hypothesis Besides this insular *sclerosis cannot be said to be a family disease which might be expected were the disease of congenital origin* It is in my experience exceedingly rare to meet with more than one example in a family Diseases of the nervous system of endogenous origin are usually characterised as well by the fineness of the changes observed *in the structures involved* as by their slow and comparatively steady progress uninterrupted by any important tendency to marked remissions and relapses On the other hand if we turn to diseases of exogenous origin we shall find that in one undoubtedly and pre eminently of infective origin—syphilis—we are apt to meet with this peculiar feature very distinctly *exhibited* Thanks to the fact that specific treatment in syphilis has a powerful and very definite influence upon most cases of the disease it is quite likely that the tendency to recovery followed sooner or later by relapse in *that disease is a good deal obscured* But even as it is that tendency is constantly showing [illegible] when the beneficial effects of the

gummata endarteritis and the like For the most part the changes in insular sclerosis may be said to be of gross character It is true that some observers have pointed to the fact that occasionally the anatomical appearances in insular sclerosis cast some doubt upon the more usually received opinion that the disease is of inflammatory origin Redlich *for example amongst* others has found in insular sclerosis nerve fibres profoundly affected along with relatively little-changed neuroglia, and says that vascular changes happen only in a certain number of cases. But, as I have pointed out on another occasion, this is by no means conclusive. Parenchymatous degeneration of the posterior columns in a case of tabes may be accompanied by gross intracranial endarteritis. Presumably, therefore, a toxin may give rise coincidently to each form, and in some cases of insular sclerosis—or in some localities in a particular case—its influence may fall upon the nerve fibres rather than on the vessels and interstitial tissue.

The remarkable variations in the degree of acuteness in insular sclerosis, again, appear to be much more consistent with an infective than an endogenous origin. I have had cases under observation in this hospital in one of which 15 and in another 19 months only had elapsed from the commencement of symptoms and death. One that I met with in private (which was not, however, verified by necropsy) lived only 12 weeks. Ribbert examined anatomically one that survived only for three months. More often, as is well known, a far longer period characterises these cases, which may drag on for ten or 20 years or more.

We are well accustomed to the differing degree of acuteness in all forms of infective disorder, due probably either to intensity of the infecting agent or diminished power of resistance. In Friedreich's ataxia, on the other hand, to instance what is probably an example of congenital defect, the course of the disease is practically uninterrupted and chronic in character.

I fail also to see adequate grounds for the suggestion which has been more recently offered that insular sclerosis is the result of a toxic influence upon an existing defect of development. The presupposition of such a congenital defect appears to me as unnecessary as it would be in the case of infantile paralysis or of the neuritis which so often is a sequel of diphtheria. The frequency with which insular sclerosis attacks persons of exceptionally fine physique, the extreme rarity of its occurrence in more than one member of a family, as well as the marked remissions—often amounting to temporary recovery—which may take place in its course, appear to be inconsistent with such an explanation and to be much more in accord with the view that the disease is purely of toxic origin.

A Clinical Lecture

ON

TWO CASES OF HEMIPLEGIA.

Delivered at the Liverpool Royal Infirmary on May 31st, 1904,

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GENTLEMEN,—I wish to bring to your notice two cases of hemiplegia of sudden onset in young patients, cases which present a superficial resemblance to each other but which differ essentially in their pathology, prognosis, and treatment. Sudden hemiplegia is always the result of some vascular lesion in the brain, generally hæmorrhage, less frequently embolism or thrombosis. Embolism requires the existence of a clot formed in some other part of the body, generally in the heart, and carried by the blood into a vessel in the brain; thrombosis generally arises from a diseased state of the arterial walls accompanied by narrowing of the lumen. Hæmorrhage likewise indicates disease of the arterial walls but of a kind which leads to rupture under the pressure of the contained blood. There are practically only two conditions which give rise to arterial disease—viz., senile degeneration and syphilis—and consequently we may safely assume that hemiplegia in a patient under the age of 40 years is due primarily to valvular heart disease or to lues venerea.

The first case is that of a man, aged 25 years, a hairdresser, who has had right hemiplegia for a year. Two years ago he contracted syphilis and was treated for it, as he says, for seven months; but we do not know the kind of treatment that was prescribed nor with what thoroughness it was carried out. No secondary symptoms were noticed and he remained in fair health for a year, after which he began to suffer from intense occipital headache which lasted three weeks. Near the end of this time the paralysis began. While he was shaving a customer he felt his right leg suddenly give way under him; he fell to the ground and found that he was unable to move his right arm and leg. After a few minutes power returned and he got up and walked home, a distance of about 200 yards. An hour later, as he was walking upstairs, he had another similar but more severe attack. He fell down, the right arm and leg and the right side of the face were convulsed, and there was involuntary micturition. The convulsions lasted nearly 24 hours. Speech was seriously interfered with, but consciousness, he believes, was not lost in either attack. He remained quite helpless and was confined to bed, but after three months enough power had returned in his leg to enable him to walk about with the help of a stick, while the arm remained useless. At the present time he presents the characteristic picture of chronic hemiplegia. There are spasm of the right side of the mouth and difficulty of articulation, the right hand is contracted and almost motionless, while the elbow, and still more the shoulder, can be moved fairly well. The right leg is stiff, the knee being generally kept straight and the foot over-extended, and he walks with the characteristic hemiplegic gait, the foot being moved forward in a segment of a circle with the hip tilted to the opposite side to avoid the toe catching in the ground. The knee-jerk is extremely lively and an ankle clonus is readily obtained. The other systems are normal and the general health is satisfactory. A small scar indicates the seat of inoculation.

In view of the early age of the patient and the absence of any possible source of embolism we should be justified in considering this as a case of thrombosis from syphilitic disease apart altogether from the history of infection. Two points in the history of the onset of the attack strengthen this supposition—viz., the occurrence of severe antecedent headache and the retention of consciousness during the attack. Severe headache in a person not previously liable to it should always suggest the possibility of syphilis. In this case it was probably due to localised basal meningitis which is a frequent manifestation of the disease. The significance of the retention of consciousness is that it points to the lesion being a thrombosis rather than a hæmorrhage or embolism. Cerebral hæmorrhages, except the smallest, are almost always attended by coma in consequence probably of the increase of intracranial pressure brought about by the effused blood, aided, it may be, by the shock or concussion arising from the coarse damage to the brain. In embolism, unless the vessel occluded is very small, consciousness is generally lost for a while. Here there is no question of increased intracranial pressure but there may well be a severe degree of shock. The arrest of the circulation in the district supplied by the obstructed artery takes place with absolute suddenness and the instantaneous arrest of function in a considerable mass of brain tissue may readily upset the balance of the whole organ.

In thrombosis, on the other hand, there can obviously be no increase of intracranial pressure and a large vessel is seldom obstructed all at once. Some slowing of the circulation through the narrowed arteries must take place before it is arrested altogether and where a large vessel has been occluded we often have evidence that the obstruction has commenced in some of the branches and spread from them to the main trunk. Hence there is an absence of shock and the surrounding parts have time to adapt themselves to the changed conditions. The first paralytic seizure, from which recovery took place, suggests a temporary arrest of the circulation, restoration being due either to the obstruction not being complete or to the establishment of a collateral circulation. Either explanation is consistent with a state of the arteries predisposing to thrombosis.

We conclude, therefore, that this patient is suffering from the consequences of thrombosis of some of the vessels in the left side of his brain, the thrombosis being the result of syphilitic disease of the arteries. The onset of paralysis at so early a period, one year, after infection, is worth notice, though it is not so uncommon as to throw any doubt on the correctness of the diagnosis. The prognosis is good so far as life is concerned. We may with some confidence assure the patient that if proper treatment is carried out there will be no extension of the paralysis. We cannot restore the portion of his brain which has been deprived of its blood-supply but by perseverance he may train the remaining portions to take on some of its functions and he may educate his left hand The treatment will consist chiefly in the administration of mercury and iodide of potassium and in the performance of appropriate exercises for the muscles

The next case is that of a woman, aged 22 years who has had left hemiplegia which came on suddenly a fortnight before admission She had rheumatic fever in childhood and scarlet fever at the age of 14 years but had no other illness of importance till the beginning of April this year when she had some pain in the left foot followed by headache A few days later on awaking in the morning she found she was unable to move her left arm and leg In view of the age and sex of the patient and the sudden onset of the hemiplegia I was prepared to find a source of embolism in the existence of well marked mitral stenosis In this however, I was mistaken There were no presystolic murmur no substernal pulsation and no notable accentuation of the pulmonary second sound Further, there was a soft systolic murmur heard at the apex The impulse was felt chiefly in the fourth left interspace and it was doubtful whether there was any cardiac hypertrophy We know from experience that mitral stenosis is by far the most *frequent cardiac lesion which gives rise to embolism* The dilatation of the left auricle in this condition favours coagulation of blood in the appendix and a portion of the clot may break off and be carried away by the current of blood The absence of mitral stenosis therefore seemed to throw some doubt on the correctness of the diagnosis of embolism and the doubt was strengthened by the history of premonitory headache After the first three days however, we found that the patient s temperature, normal on admission assumed a hectic type rising in the evening to about 102° F and falling in the morning to about 97° and I began to suspect that we had to do with a case of infective or ulcerative endocarditis This suspicion was strengthened by our finding some enlargement of the spleen and it was placed beyond doubt by the discovery of streptococci in the blood from which cultures were obtained on two occasions

Here we have a case of hemiplegia depending on embolic obstruction of a vessel in the brain the embolus having arisen from a septic inflammation of the endocardium and the hemiplegia is really symptomatic of infective endocarditis The premonitory headache, unlike that noticed in the previous case, was clearly not due to a local condition but to the toxic state of the blood and was analogous to the headache of specific fevers

The prognosis in this case is obviously much graver than in the former In neither case can we expect complete restoration of movement to the paralysed parts but in the second we have to deal with a constitutional condition which is but little influenced by therapeutic measures and behind this we have a certain amount of permanent damage to the heart

Infective endocarditis is one of the most fatal diseases with which we are acquainted but recovery though rare is not unknown and the prognosis becomes better the longer the case lasts The treatment must be chiefly directed towards maintaining the patient s strength and moderating the fever Quinine in full doses is frequently prescribed and in a case under my care some years ago its administration was followed by recovery Antistreptococcic serum has been frequently employed but the results have been disappointing In the present case it has been administered hypodermically in 30 cubic centimetre doses on 11 nearly consecutive days without producing any obvious effect on the temperature or the other symptoms Subsequent examination of the blood however did not yield any evidence of the presence of micro organisms but how far the serum therapy employed is to be credited with the disappearance of the streptococci is open to doubt

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METROPOLITAN HOSPITAL SUNDAY FUND —The total amount received at the Mansion House on behalf of the Metropolitan Hospital Sunday Fund up to Tuesday evening was £46 000 to which may be added about £11,000 as Mr George Herring s generous contribution, leaving about £7000 still to be made up if the fund this year is not to fall below that of last year

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ON VINCENT'S ANGINA

BY H W BRUCE, M D B S LOND , F R C S ENG ,
OUTHWARK UNION INFIRMARY
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VINCENT S angina is a form of pseudo diphtheria which is associated with, and is probably due to, certain characteristic micro-organisms The membranous or pseudo membranous affections of the pharynx which do not depend on the presence of the diphtheria bacillus are worthy of very careful attention Early diagnosis is of great importance and depends mainly on bacteriological examination If the clinical features of these affections be alone relied on in the early stages to reveal the nature of the disease they will very frequently indeed be mistaken for diphtheria and the dread which that disease still inspires and all the inconveniences of isolation will be inflicted unnecessarily upon the patient Treatment will be wrongly directed and prognosis will be faulty

The form of pseudo diphtheria illustrated by the ten cases on which this paper is based was first described by Vincent in 1898 His observations have been verified by many French and German writers since that date but so far as I can discover the disease has received very little attention from English observers It is I believe not uncommon but its frequency is, without doubt, masked, as Vincent surmised by the fact that it is still frequently confounded with diphtheria The pathological processes in the two diseases are, however quite different In Vincent s angina there is a necrosis of the mucous membrane which, spreading deeply, may involve *and destroy the whole thickness of the tonsil or the whole* of the uvula but which never gives rise to the formation on the surface of the mucosa of a thick false membrane such as occurs in diphtheria When a considerable amount of destruction of tissue has taken place the distinction is made readily enough But when as in the milder cases, the necrosis is very superficial or as in the more severe type at the outset the presence of the necrosed epithelium on the surface hides the depth of the lesion, the resemblance to diphtheria is very [illegible] can then only be made by [illegible] ich determines the absence [illegible] presence in large numbers of a typical bacillus with which is often associated a spirillum These micro organisms are fully described below

Clinical characters —The onset of Vincent s angina is often in children quite insidious In some cases there has been such an absence of symptoms that the affection has only been discovered during a routine examination of the throat In others attention is drawn by the glandular enlargement in the neck In a minority only is there at the outset complaint of sore throat or pain in swallowing It is however not always easy in the case of children to ascertain the presence or absence of a slight amount of dysphagia In adults headache general malaise or sore throat or a combination of these symptoms, may usher in the disease

Examination of the throat in the early stage shows what appears to be a patch of exudation situated on some part of one tonsil or on the upper part of a tonsil the upper part of the uvula on the same side and the edge of the soft palate between The latter situation is unusual in diphtheria and should arouse suspicion as to the nature of the complaint The pseudo membrane is yellowish or greenish yellow in colour It is detached only with difficulty leaving a bleeding eroded surface and it has a very distinct fœtor If this is not sufficient *to taint the breath it can be readily detected* by rubbing a swab on the patch The appearance of the throat in this early stage may exactly resemble that produced by the formation of the membrane of diphtheria But the after course of all but the mildest cases clearly shows that no such formation of membrane has occurred and that the patch is the result of necrosis of the superficial layer of the mucosa and not the result of the formation of membrane upon the surface

Mild or diphtheroid type —In the mildest cases, which Vincent has called "diphtheroid," the process does not extend over much of the surface nor penetrate to any depth It is invariably unilateral in such cases, which is again something of a distinction from diphtheria There is practically no swelling of the fauces and very little injection. Enlargement of the lymphatic glands in the neck is nearly always present on the side of the lesion but is never very great, is never accompanied by periglandular exudation, and never results in suppuration. The submaxillary group is most commonly affected.

The temperature is generally a little raised but it rarely exceeds 101° F. Constitutional symptoms, loss of appetite, and general malaise are but slightly marked. Adults may complain of dysphagia; its presence is not usually ascertained in children. In the course of from 24 to 48 hours the temperature falls to normal and the general symptoms disappear, but this does not coincide with any particular change in the condition in the throat. The necrosed patch only slowly separates, leaving generally a shallow but definite excavation which quickly heals over. From eight to ten days is the usual time which elapses before the tonsil has cleared up. In adults it may be shorter. There are no complications nor after-effects. The disease when it follows this type is in fact a mild one, of little moment. Its only importance lies in its resemblance to diphtheria, which, as far as symptoms and naked-eye appearances are concerned, continues throughout its course until the separation of the slough.

Ulcero-membranous type.—In these more pronounced cases the appearance of the fauces is at the commencement identical with that in the preceding group but the process soon extends over the surface and involves the mucous membrane more deeply. The whole of one tonsil may be affected with the adjoining pillars of the fauces and the adjacent edge of the soft palate and side of the uvula may be attacked. The lower edge of the pseudo-membrane may be beyond the field of vision and frequently ordinary examination reveals only a small area of necrosis, while by thoroughly depressing the tongue and inducing retching a very large patch is brought into view. The disease but rarely involves the other side of the pharynx.

It is not until three or four days after the onset that it becomes clear that a destruction of tissue is taking place such as does not occur in diphtheria and the case then loses all resemblance to that disease. These cases Vincent describes as first diphtheroid and later ulcero-membranous. The process having ceased to extend, a slow separation of the slough takes place. This generally takes from ten to 14 days, but may be much longer. The whole surface of a tonsil or its whole substance may separate, leaving a deep excavation. Necrosis of the upper part of the uvula and of the tonsil and of the edge of the soft palate between may lead to an increase of the aperture of the fauces in this region. Half of the uvula may be destroyed. This occurred in Case 1. The part of the uvula which escaped, which was little more than a shred, was drawn up to the opposite side and became unrecognisable. In extreme cases the whole uvula may be attacked and come away as a grey foul slough. This took place in Case 10. During the process of separation of the necrosed mucous membrane granulations appear on the surface which bleed readily when touched. When once the surface has cleared up healing quickly occurs. If there has been much loss of tissue some contraction may result as in Case 1. With the condition in the throat there is always a certain amount of pyrexia, which is, however, seldom very marked or prolonged. Difficulty in swallowing may persist for a few days, and while the temperature is raised constitutional symptoms, headache, loss of appetite, and general malaise are present. There is, as in the preceding group, very little swelling of the fauces and generally not much reddening. In severe cases, however, a zone of intense injection may surround the affected area. Some enlargement of the glands of the neck is invariable, but is small in amount and does not go on to suppuration. Albuminuria is very rarely present. Case 9 recorded below is the only instance I have found of its occurrence.

In the majority of cases complete recovery ensues, the only after-effect being an occasional drawing down of the palate to one side as a result of the contraction which occurs in the healing process. But although the tendency of the disease is generally towards recovery a special virulence of the causative agent or a special susceptibility of the patient may result in the lesion spreading widely through the pharynx and becoming then a serious menace to life. Cases 9 and 10 illustrate extreme results of the necrotic process. In both death ensued: in the first seven days after the onset, apparently from toxic absorption from the site of disease; in the second the disease spread to the larynx and gave rise to necrosis of the thyroid cartilage. Suppurative broncho- [illegible] to which the patient succumbed on the [illegible] his illness.

Prognosis.—It is impossible at the present time to ascertain even approximately the death-rate in Vincent's angina. It can only be said that it is very much lower than in diphtheria. Cases as severe as those mentioned above are in all probability quite [illegible] are said to occur and one attack doe [illegible]

Bacteriology.—Cultivations taken from the throat in this disease do not yield characteristic results. The growth which occurs is composed of different micro-organisms, the pyogenic cocci being the most frequent. The bacillus coli communis is occasionally present (Vincent, Raoul and Thiry, Lemoine) and the pneumococcus has been observed (Neissler) mixed with other cocci. If, however, a little of the exudation be rubbed on a slide and stained with any aniline dye a characteristic bacillus is seen in great numbers and with it is frequently associated a spirillum. The relative numbers of the two vary. In the mild diphtheroid cases the bacillus always greatly predominates. Vincent, in fact, states that it may be exclusively present. In the ulcero-membranous type, on the other hand, the spirillum is much more frequent and may even be present in greater numbers than the bacillus.

The bacillus which Vincent has called the "fusiform bacillus" is very long (from 10 to 12 μ generally). Its centre is a little thickened and its ends somewhat pointed, giving rise to the typical fusiform shape from which it has derived its name. Two bacilli arranged end to end are sometimes seen, but apart from that it is usually distributed uniformly through the field. It may be present in such numbers as to form almost solid masses. Shorter forms are seen (from 6 to 8 μ), occasionally curved and comma-shaped. Very long, badly-staining bacilli are also sometimes present, and now and then a bacillus is seen which is greatly swollen in its centre, the expanded part not taking up the stain while its edges are defined by a thin dark line. The bacillus is readily stained by aniline dyes but frequently not uniformly. One or more clear spaces are present in its length. These may not be visible if it is stained too deeply. It does not yield the Neisser staining reaction and it is decolourised by the Gram method. Its motility is doubtful. So far all attempts to cultivate it have failed.

The spirillum is only faintly stained by the ordinary reagents. It is decolourised by the Gram method, is motile, and, like the bacillus, has never been cultivated. At the commencement of the disease either the bacillus or the bacillus and spirillum are found almost pure in the pseudo-membrane. Later they become mixed with numerous other micro-organisms which inhabit the mouth. Even then the bacillus has been found isolated in the deeper parts of the lesion (Vincent). The spirillum, on the other hand, is always most numerous on the surface. Inoculation of animals with portions of the false membrane has not produced any definite result.

Both the above micro-organisms, or, at least, organisms exactly resembling them, have been found in small numbers in the mucous membrane of the mouth and pharynx in the normal state. They have also been found in dental tartar. In membranous and ulcerative diseases of the pharynx, the bacillus, like other micro-organisms which inhabit the mouth, may be present in the lesion, but only in very small numbers. A spirillum indistinguishable from the above has been found in abscesses adjoining the buccal cavity.

The question as to whether these micro-organisms are the actual causative agents in the disease cannot yet be considered settled. The failure to cultivate them makes it impossible definitely to decide the point. Their presence in such large numbers and so constantly makes it, however, very probable that the pathological process which occurs is due to their presence. Vincent, arguing from the fact that it is alone present in some cases, considers the bacillus the more important factor; recognising at the same time that the spirillum, since it occasionally predominates in numbers, must be of importance in the etiology. It is possible that the growth of the bacillus is aided in some way by the presence of the spirillum.

The relation of Vincent's angina to hospital gangrene and to ulcerative stomatitis.—Opportunities of observing hospital gangrene or phagedæna are nowadays very rare but Vincent, in 1895 and 1896, was able to make a bacteriological examination in a number of cases which he saw in Algiers.

[illegible] ction, and in their resistance [illegible] them were identical with the [illegible]

The resemblance between the lesion in the two diseases is very close indeed. It differs, in fact, only in locality and it is of great interest to find that they are both associated with the same micro-organisms. Bernheim in 1898 first drew attention to the presence in ulcerative stomatitis of bacilli and spirilla apparently identical with those which had already been observed in certain anginas. His statements have been verified by several writers since. Case 4 and 7, described below, both presented a localised ulcerative stomatitis in addition to the throat condition, and in both cases fusiform bacilli and spirilla were present in large numbers in both buccal and faucial lesions. In a case of more general ulcerative stomatitis occurring in a woman dying from carcinoma of the rectum I found the same micro-organisms in great profusion.

In conclusion, I have to express my indebtedness to Dr. R. A. Birdwood, medical superintendent of the Park Fever Hospital, and to Dr. J. S. Richards, medical superintendent of the Southwark Union Infirmary, for permission to publish the cases related below.

Case 1.—The patient, a girl, aged eight years, was taken ill on Sept. 12th, 1903. On the 13th she complained of headache and sore-throat, on the 14th glandular enlargement in the neck was noticed, and on the 18th she came under observation. Her temperature was 101° F. The right tonsil, the right side of the uvula, and the edge of the soft palate were then covered with a fœtid greyish-yellow pseudo-membrane. The lower edge of the affected area could not be seen. On the 21st the slough was separating and by the 28th it had separated, leaving a deep excavation where the tonsil had been, while the uvula which remained was merely a shred. The edge of the soft palate was also hollowed out. Small granulations covered the healing surface. The shred of uvula was almost at once drawn up to the opposite side and in a short time could not be recognised. No complications ensued. A month later there was some drawing down of the soft palate towards the affected side.

Case 2.—The patient, a girl, aged three years, did not seem well on Oct. 17th. She appeared to have some difficulty in swallowing on the 18th when she came under observation. Her temperature was 100·6° F. The upper part of the left tonsil, the upper part of the left side of the uvula, and the edge of palate between was covered with what looked like greyish exudation. There was distinct fœtor. On the 20th there was a little glandular enlargement in the neck and the necrosed patch showed signs of separating. The throat was not quite clear till the 30th The temperature fell to normal on the third day. The angle between the uvula and the tonsil was considerably enlarged by the loss of tissue which had occurred.

Case 3.—The patient, a girl, aged three years, was taken ill with vomiting on Oct. 23rd and was first seen on the 24th. The temperature was 100·4° F. There was a greenish-yellow patch on the tonsil with fœtor. On the 26th the temperature was normal. The throat had cleared up by the 30th, a shallow but distinct excavation remaining which quickly healed over.

Case 4.—The patient, a boy, aged five years, presented no symptoms of illness. On Dec 22nd, in course of routine examination, a yellowish-white patch was seen on the right tonsil, and the temperature was found to be 100° F. On the 23rd a submaxillary lymphatic gland was enlarged. The temperature had fallen to normal. A limited area of ulcerative stomatitis was present surrounding two lower molar teeth which were quite loose. Fusiform bacilli and spirilla were found in large numbers in the ulcerated area. The throat very slowly cleared up. It was not normal till Jan. 8th.

Case 5.—The patient was a boy, aged three years. On [illegible]

[illegible] the same side. The temperature w[illegible] child did not appear in any way ill. There was distinct [illegible] at cleared up in ten days, no other symptoms developing. In this case the spirilla were more numerous than the bacilli.

Case 6.—The patient was a boy, aged three years. Attention was drawn to this case by glandular enlargement in the neck. A patch was found on the left tonsil. There were no rise of temperature and no other symptoms. The throat was clear a [illegible]

Case 7.—The p [illegible]
ing from congeni [illegible]
attention was draw [illegible]
lymphatic glands. A patch of greenish pseudo-membrane covered the upper part of the left tonsil and the angle between it and the uvula. There was also, as in Case 4, a localised ulcerative stomatitis about the lower temporary molar teeth on one side. Bacilli and spirilla were present in both lesions. Fœtor was marked. The throat cleared up in 12 days.

Case 8.—The patient, a female, aged 25 years, was attacked with headache and general malaise on March 1st. On the 2nd there were sore throat and a little glandular enlargement on the left side of the neck. A greyish patch was present on the left tonsil. On the third day the temperature was normal and the patient felt well but the condition of the throat was unchanged. Two days later it had cleared up.

Case 9.—The patient, a girl, aged eight years, came under observation on April 8th, 1903. She had been ailing since the 5th; she had complained of headache but not of sore-throat. Her temperature was 104° F. A thin greyish pseudo-membrane covered the left tonsil, the left side of the
uvula, [illegible] r was
very m[illegible] n the
neck. [illegible] eudo-
membrane was thicker The general condition of the child was distinctly worse. She was very restless. On the 10th the slough was greenish-yellow, exceedingly foul, and had invaded the right side of the pharynx. A cloud of albumin was present in the urine. On the 11th both tonsils and the whole of the uvula were covered by slough. Swelling of the fauces was very slight, as it had been all along. A narrow zone of intense injection surrounded the necrosed area. The temperature was irregular but had never fallen below 101·6°. On the 12th foul diarrhœa set in. The child was exceedingly pale and slightly jaundiced. Her condition became steadily worse and she died at midnight. At the post-mortem examination the whole of the fauces, the base of the tongue, and the epiglottis were covered by a greenish-yellow foul slough. The organs were healthy.

Case 10.—The patient, a boy, aged nine years, had suffered from headache and sore-throat for a week before he came under observation. There was then a yellowish pseudo-membrane covering the right tonsil, the right side of the uvula, and the edge of the soft palate on the right side. The temperature was 100° F. There was a little glandular enlargement in the neck. During the next few days the pseudo-membrane became a definite slough which, increasing in size, involved the whole thickness of the right tonsil and of the uvula. The left tonsil was also attacked over a limited area. On the fourteenth day of illness the sloughs were definitely separating and by the twentieth day the right tonsil had completely disappeared, leaving a deep excavation. On the same day the uvula was picked off with forceps as one slough. Sprouting granulations appeared over the raw area left by the separated sloughs. During this period the temperature had been very irregular but always raised and the breath had been very foul. By the twenty-eighth day the fauces had healed. On the next day but one some tenderness and swelling appeared over the thyroid cartilage. This was followed by aphonia, slight stridor, and expectoration of pus. The temperature was higher. From this time onwards the patient went steadily downhill. A little stridor persisted but there was never sufficient respiratory obstruction to necessitate tracheotomy. Signs of consolidation appeared over the left lower and the right upper lobes. There was profuse purulent expectoration, great tenderness over the larynx but very little swelling, and persiste [illegible]
[illegible] hirty-sevent [illegible]
[illegible] ion to the [illegible]
[illegible] ces the righ [illegible]
[illegible] l. The anterior part of the thyroid [illegible] necrosed and lay in small pieces in a cavity which opened into the larynx in front. The walls of the

cavity and the edges of the opening were green and sloughy. There was much swelling of the upper aperture of the larynx. The right upper and the left lower lobes of the lungs were affected throughout with broncho-pneumonia which had in many places broken down, giving rise to multiple abscesses. The other organs were healthy.

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DIET IN CHRONIC HEART DISEASE.

BY PROFESSOR THEODOR SCHOTT, M.D.

AS a kind of supplement to a discussion which took place at a meeting of the British Balneological and Climatological Society in the spring of last year and, moreover, in accordance with the express wish of numerous practitioners, I will now endeavour briefly to pass in review some general rules with respect to the diet which I have found satisfactory in the treatment of chronic heart disease during the year. Only such points will be discussed at length as have a direct relation to heart diseases.

The principal rules, which are, in fact, to be regarded as fundamental, may be conveniently summed up in the two following clauses: (1) patients must avoid everything which excites the action of the heart; and (2) everything must be avoided which embarrasses the action of the heart.

The substances which most readily cause excited action of the heart are in the first place strong coffee or strong tea and in the next place strong alcoholic liquors. It is to be observed that in persons who from youth upwards have made free use of coffee or tea, either in great quantities or in strong infusion, if they come to suffer from heart disease a relatively small quantity of such habitual stimulants will be found to aggravate the cardiac symptoms. This is the reason why in Germany the medical men are just as strongly opposed to coffee drinking by sufferers from heart disease as in England they are opposed to tea-drinking in like circumstances. With regard to alcohol, its use as a daily beverage in an undiluted form, whether whisky or brandy, must be avoided as much as possible, and it must in any case be given only to patients for whom it is either indispensable as a stimulant or who have taken it for so many years that the sudden withdrawal of it might be dangerous in view of the possibility of collapse. In such cases the best plan is to give Rhine wine, Moselle, or Bordeaux which has been matured (*gelagert*) for eight or ten years, because in newer wines there is not only a larger proportion of fusel oil but experience also shows that there still exist too many fermentable substances which may very easily act injuriously. A tablespoonful of old Cognac brandy or whisky for some patients and an ounce of old sherry or port for others are almost indispensable as stimulants in cardiac weakness, but, as has been already said, if taken regularly they are capable of doing harm by producing cardiac irritability. It must here be remarked that a light or diluted wine agrees best with patients in Southern or Central Europe, whereas in Northern Europe, and especially in damp northern climates, a typical example of which is to be found in Great Britain, preference should, on the contrary, be given to Cognac brandy or whisky mixed with plain water and diluted until the proportion of the alcohol component is reduced nearly to that of moderately strong or even light wines. It is very necessary to forbid the addition of aromatic substances (such as ginger) to the alcohol, for simultaneous irritability of the stomach and heart often lead to loss of appetite and insomnia.

Moderate quantities of ordinary water or milk are by far the best beverages; next in order come tea or coffee, both of them with copious addition of milk. Patients for whom some fatty material is desirable may take cream either by itself or mixed with milk. Sterilised cream agrees better with many patients and it has the further advantage that it is not apt to produce flatulence. Cocoa deprived of its fat can be strongly recommended, whereas chocolate is seldom found to agree well, either on account of the quantity of sugar which it contains or from the slow digestibility of cocoa fat, and the vanilla present in it often has the effect of exciting the heart. The amount of fluid which may be taken at one and the same time will be referred to presently.

With respect to the second rule above given, it is of the first importance that the patient should avoid taking enough to cause any considerable distension of the stomach and that he should eat nothing which is difficult of digestion or tends to produce flatulence. It hardly requires to be explained in detail how indigestible substances remain too long in the stomach and prove injurious in consequence of the intimate connexion between the nerves of the heart and stomach. Too hearty eating or the ingestion of substances which produce flatulence may be harmful in three ways. 1. The diaphragm is pressed up against the lungs so that respiration is impeded and the shortness of breath and dyspnœa thence arising are well known to be peculiarly injurious to sufferers from heart disease. 2. The distended stomach also presses the diaphragm directly against the heart, forces the heart upwards and outwards, and displaces it in the direction of its base in such a way that its action can only be carried on with a greatly increased effort. 3. In like manner the intra-abdominal pressure is augmented and the abdominal vessels are compressed. The general result is that the heart is weakened and the cardiac muscle not unfrequently suffers in the struggle. For this reason effervescing beverages, whether carbonated water, champagne, or beer, for the most part disagree with patients who are the subjects of heart disease. In the case of beer, which is essentially the product of an artificially interrupted carbonic acid fermentation, the irritant properties of the extractives which it contains have also to be considered. Palpitation, shortness of breath, and conditions favourable to arterio-sclerosis are only too often met with as after-effects of effervescing alcoholic drinks.

As such patients must never eat until a feeling of repletion is induced the generally accepted system of having three meals a day is not advisable for them and it is much better to take small amounts of food at shorter intervals. If the patients are very weak or very ill it may be necessary for them to have food every two hours, but in general food every three hours is often enough, the last meal of the day being taken two and a half or three hours before bedtime, for if this is neglected the result will be a bad night or at least broken sleep, which is apt to be followed by general irritability and cardiac difficulties of many kinds. If in any way possible, each of the daily meals ought to have about the same nutritional value, because this, apart from its utility for digestion, conduces best to a uniformly beneficial effect on the heart. With regard to individual dishes it must in the first place be specially pointed out that it is not advisable to take considerable quantities of soup, because from the meat extractives which they contain soups in general, and either clear soups made from fresh meat or consommés in particular, are apt to produce a disturbing effect out of proportion to their nutritional capacity. Even soups of which any kind of solid addition (*Einlage*) forms a part have but little food value in proportion to their bulk, so that no more than a moderate quantity (only a few tablespoonfuls) can be recommended, for larger amounts interfere with the taking of really useful substances. New bread, whether brown or white, and freshly baked cakes are totally to be avoided, for they too often cause distension of the stomach and great flatulence. Toast, zwieback (a kind of rusk or "pulled bread") made without sugar, or the crust of rolls may, however, be taken. Among vegetables those are to be avoided which are either difficult of digestion or productive of flatulence, such as beans, peas, lentils, sauerkraut (preserved cabbage), red cabbage, leeks, onions, garlic, and celery. Potatoes in the form of purée or simply boiled in water are to be preferred to the less digestible baked potatoes. Turnips and carrots should be eaten only when fresh and young. In other respects, fresh and easily digestible vegetables cannot be too highly commended.

Animal food, in its various forms, especially fish and poultry, are allowable, but it hardly needs to be said that *certain indigestible articles included under the heading of* fish and poultry are to be forbidden; eels, fat goose breasts, and goose-liver pies are examples of this kind. The same rule applies to rich sauces or mayonnaise, for salmon, lobsters, and crabs taken with these accompaniments are much more trying to cardiac patients than they otherwise would be. Oysters, mussels, and game (*Wildbret*) seldom do harm if fresh and prepared in a plain style, but highly smoked and salted fish or meat are objectionable because the great thirst which they produce easily tends to too much water being drunk. Among fatty substances butter and cream are by far the best, being easy of digestion. Fat bacon or the fat on a ham is, on the contrary, to be avoided on account of its indigestibility. The same rule applies to the hearty eating of fat. Oil generally does not agree well. Hot seasonings are injurious, red and black pepper being worst of all. *They not only* produce gastric irritation and great thirst but they have a specially harmful influence on the kidneys, an influence which in cases of weak heart may lead to conditions full of danger. Sausages, goulasch (a kind of meat stew), and salads containing pepper are therefore to be avoided. On the other hand, vegetable salads without hot seasoning, and particularly when made with lemon-juice, are permissible. There are many other seasonings or spices, such as nutmeg, mace, cinnamon, and vanilla, which are capable of doing harm by their tendency to quicken the action of the heart. The same thing may be said of horse-radish, which not only is apt to produce flatulence but also irritates the mucous membrane.

Easily digestible fruit stewed with the addition of a little sugar can be recommended, particularly on account of its favourable influence on gastro-intestinal peristalsis which is *often so much impaired in heart disease that obstinate* constipation is the result. For the same reason raw fruits which have to be peeled, such as apples, pears, apricots, peaches, and oranges, are often desirable. Grape-stones may act as irritants and should be removed before the fruit is eaten. On the other hand, raspberries, gooseberries, currants, bilberries, cranberries, pineapples, walnuts, Brazil nuts, and hazel nuts are to be prohibited, even when deprived of their membranous investment, for they may be injurious to sufferers from heart disease either from their indigestibility or from irritant substances which they contain. Only those kinds of food which are quite easily digestible can be recommended.

Ice in any form whatever, whether as iced drinks, fruit ices, or ice pudding, may not only cause gastrodynia in cardiac sufferers but, as I have often enough observed, is capable of directly producing congestion of the liver. This must be kept in mind even when the medical attendant is compelled to prescribe ice for the relief of vomiting. At the same time nothing should be either eaten or drunk while it is very hot, as excitement of the heart's action is easily caused in that way.

It is impossible to urge too strongly that sufferers from heart disease always require a mixed diet. With them the use of a diet consisting exclusively of meat very easily leads to the excretion of urine containing an excessive amount of dissolved solids and supersaturated with uric acid. I have even seen cases in which over-indulgence in animal food appeared to have been the principal, if not the only, cause of irritation of the kidney with hypertrophy and dilatation of the heart. An entirely vegetable diet is no less injurious. In order to make up the requisite amount of nutritive material, such *food must be taken in considerable quantities*, whereby the stomach is over-filled, and apart from this the supposition that arterio-sclerosis may be prevented by a dietary consisting of carbohydrates has been proved to be erroneous. Indeed, the very reverse of this is the fact, for it has been found that calcification of the vessels is encouraged by such a diet. Thorough comminution and copious insalivation of what is eaten are as important in diseases of the heart as in diseases of the stomach.

There is great diversity of opinion on the subject of tobacco-smoking. Many think that smoking when not carried to excess is quite harmless in heart disease and others consider that even in the cases in which the patients have found their symptoms aggravated by the use of tobacco the normal conditions are sure to be restored by a few months' abstinence. My experience leads me to regard tobacco with great disfavour, for I have seen quite a number of instances in which an excessive use of it was the only cause that could be assigned for the production of chronic heart disease and arterio-sclerosis. In tobacco there are many substances besides nicotin that may act injuriously *and for this reason the* partial removal *of the alkaloid*, a process to which tobacco has often been subjected in recent years, is no guarantee that much smoking may have no ill consequences. I therefore always recommend patients suffering from heart disease either to give up smoking altogether or else to indulge in it most sparingly, and in the latter case to use very dry tobacco and a long mouthpiece or pipe. A patient should always be informed that smoking is bad for his heart disease. Some years ago I had an opportunity of observing how dangerous opium smoking is for the heart, the patient being a woman, 22 years of age. At first a great smoker of cigarettes and afterwards of opium, she gave up the practice for a considerable time when placed under strict supervision but the first attempt at renewal of opium smoking brought on a severe attack of cardiac failure for the relief of which it was necessary to use camphor and *hot applications over the heart.*

As a result of observations made by Oertel, it has been very much debated whether sufferers from heart disease ought to drink at meal times or not. I have, however, already stated that the only condition which requires attention here is that the stomach shall not be overfilled and the principal advantage of not drinking at meal times is that the patients when they do not drink eat less that when they drink. In the treatment of fatty heart and general adiposity, as well as in plethora, it is better not to drink but when it is desirable that the patients should have plenty of food there is absolutely no reason for the prohibition of drinking at meal times, provided that the measures of precaution already described are complied with.

The majority of sufferers from heart diseases feel themselves better if they take gentle exercise in the open air for *a short time after meals. Sitting still is apt not only to* bring on palpitation and shortness of breath, but also to encourage the deposition of fat; it is therefore appropriate only when the latter condition is desirable or when the patients are too weak to take exercise after meals. In other cases exercise after meals is to be recommended. In heart disease it is evidently quite essential that the individual characteristics of the patients should be studied and that the treatment should be modified in correspondence with the symptoms.

The rules here given are for the most part applicable to uncomplicated cases of chronic heart disease, whether valvular defects due to a variety of causes, diseases of the myocardium, or cardiac neuroses. Heart disease associated with other morbid considerations, such as diseases of the stomach, intestines, liver, or kidneys, or with disorders of metabolism such as diabetes or gout, evidently requires special treatment. The same regimen is not suitable for a bedridden patient and for a robust individual who can walk for hours in the open-air, or for anæmic persons and for cases of plethora or corpulence. Strict regulation of the diet is requisite not only in the pre-compensation stage but also after compensation is fully established, for it is commonly recognised how easily errors in diet may either contribute to a renewal of cardiac troubles or may directly produce them. I have often seen this result follow the drinking of a glass of beer or champagne or the taking of a *hearty meal. The practitioner should remember* that the more carefully he manages his cardiac cases during the intervals between their attacks the better will he succeed in averting relapses and in contributing to the relief of his patients' sufferings and even to the prolongation of their lives.

Bad Nauheim.

THE PHYSIOLOGICAL ACTION OF THE NAUHEIM SPRINGS AND THE INDICATIONS FOR THEIR USE, CHIEFLY IN DISORDERS OF THE CIRCULATION.

BY PAUL C. FRANZE, M.D.

ALTHOUGH Nauheim owes its present popularity in no small measure to an increased prevalence of heart affections, there can be little doubt that its widespread reputation is essentially *attributable to the intrinsic merits of its waters* and to the balneological methods which have been evolved by observation and experience. In Nauheim three springs, containing from 2·5 to 3·5 per cent. of the chlorides of sodium, lithium, and calcium, together with some iron, are available for bathing. Their most obvious attributes are their richness in free and loosely combined carbonic acid and their natural temperatures, which are respectively 29·5°, 32·5°, and 35° C. (i.e., approximately 85°, 90°, and 95° F.), temperatures which at once suggest themselves as suitable for bathing. From two of these springs three different types of bath are prepared and from one of them two types, the essential features of these baths being a greater or less proportion of free carbonic acid gas. For on the proportion of this gas, which can be graduated with precision, depends to a great extent the potency of the physiological action of the waters. The first and mildest type, the so-called thermal baths, contain least carbonic acid. They are obtained by admitting the water to large open reservoirs where, in contact with atmospheric air, the free carbonic anhydride escapes with a consequent precipitation of the calcium and iron salts which it held in solution. These salts colour the water yellowish-brown. With this bath we usually commence the treatment of cardiac cases. To the second type, containing a little more carbonic acid, belong the thermal-sprudel baths, obtained by conducting the water to subterranean air-tight tanks from which it is conveyed to bathing-tubs. This water is clear or slightly yellow owing to its having lost only a little of its carbonic acid gas. These baths are of an intermediate grade between the former and the effervescing baths. The third, the effervescing type, are known as the sprudel baths. They contain the full amount of carbonic acid with which the springs issue from the earth. The water is conveyed by pipes directly to each tub without the intervention of tanks or atmospheric contact. These baths are strongly effervescing, bright and sparkling, and clear as crystal. The most potent effect is attained by immersing the patient in a continuous current of this carbonic-acid-laden water. Clear brine baths, from which the carbon dioxide and the salts which it holds in solution have been removed by percolation through brush-wood, are also used at Nauheim. They contain some 3 per cent. of the chlorides and are prescribed with some measure of success as an adjunct in the treatment of rachitic, scrofulous and anæmic children. I do not propose to refer further to them in this paper.

On entering a Nauheim bath of natural temperature the following symptoms are observed. There is at the outset a slight sense of shuddering, soon, however, succeeded by a general sensation of warmth. In their earlier immersions cardiac patients occasionally experience a feeling of thoracic oppression which is, however, but transient and which disappears entirely in succeeding baths. In a sprudel, or effervescing, bath the body is soon completely covered with countless bubbles of carbonic acid gas. After ten minutes' immersion the patient's temperature, taken in the rectum, falls about 0·2° C. In five minutes more a further fall of from 0·1° to 0·2° is not infrequently observed. Hyperæmia of the skin supervenes to an extent dependent on the amount of carbonic acid and salts employed. On the patient quitting the bath and being rubbed down the glow becomes more marked; the pulse also becomes stronger, more regular, and usually, though by no means invariably, slower. The blood pressure is sometimes raised and sometimes reduced—a matter to which I shall presently revert—and respiration is easier. Ordinary bathers feel themselves refreshed but the more delicate patients occasionally experience a sense of lassitude, especially after their earlier baths. If a delicate patient at the outset takes a bath containing a high proportion of the gas, excitement, fatigue, and disturbance of the heart's action may ensue. These various effects produced by the baths are attributable to the stimulation of the skin by means of the salts, the carbonic acid, and the temperature of the water. The elements in the skin which respond to these influences are the terminations of the cutaneous sensory nerves and the capillary vessels.

The temperature of a bath is an important factor in the production of its general effect. At a temperature of about 2° C. below blood-heat the influence of a bath, save as a detergent, is practically *nil*. We term this temperature—35° C.—the "point of indifference." Should the water be warmer the temperature of the body is increased and a number of changes take place in the circulatory system which are usually undesirable and to which I need not advert as these higher temperatures are not prescribed at Nauheim. We only employ those below and up to the "point of indifference," which the Nauheim waters naturally possess. In baths of the latter kind the body loses heat and as our system has the tendency, and in large measure the capacity, to maintain its normal temperature, the consequence is increased production of heat. It is known that increased exhalation of carbon dioxide corresponds to this. Coincidently there is increased excretion of urea, proving that the metabolism of nitrogenous matter is also accelerated. The most obvious physiological explanation of this improved metabolism is that the peripheral nerves convey their stimulus to the spinal cord and sympathetic centres by which it is controlled. Next we notice changes in the circulation. On entering the bath there are acceleration of the pulse and contraction of the peripheral vessels of the skin and subcutaneous tissue. Internal congestion ensues. Soon, however, the contraction ceases, the superficial vessels dilate, the pulse becomes slower and stronger, and "reaction" is manifest. This also is due to reflex action, the stimulus being conveyed to the pneumogastric nerve centres which, in their turn, control the heart.

It is very important to remember that although these changes occur in a Nauheim carbonic acid bath which is but a few degrees below the "temperature of indifference," they are not induced in an ordinary fresh water bath, except at such low temperatures as would throw an absolutely impermissible initial strain upon a debilitated heart. This is a most remarkable feature of Nauheim baths and it is essentially attributable to the salts dissolved in the water and to the carbonic acid gas, for these ingredients intensify the stimulation of the skin and modify the action of the cold. The aggregate result is that in a Nauheim bath reaction supervenes much sooner and with greater intensity than is possible with ordinary fresh water. Although it is improbable that any of the salts completely permeate the skin it would appear that they are imbibed by the epidermis sufficiently for direct stimulation of the peripheral nerve terminations and capillaries of the corium. Imbibed by the epidermis the salts maintain their action for some time after the conclusion of the bath. The entire nutrition of the skin is thus increased, it holds a greater amount of blood, and its excretory functions exhibit a revivification which is more than transitory.

Tissue metabolism is accelerated and researches as to the physiological action of chalybeate baths rich in carbonic acid show that this gas chiefly promotes the metabolism of non-nitrogenous matter. This, of course, is especially applicable to the effervescing sprudel baths. The acceleration of tissue metabolism promotes the absorption of exudations in the joints, pelvic and serous cavities, and it is known that Nauheim baths are among the most efficient means of removing the sequelæ of rheumatism and gout, of serous inflammations, such as pleurisy and pericarditis, and of inflammatory conditions of the uterine adnexa.

Since the large majority of patients come to Nauheim for the relief of some affection of the heart or circulatory system I would advert especially to this class of cases. The effect of the mineral baths on the heart is twofold—namely, (1) the mechanical removal (by the "reaction") of obstacles to the circulation at the surface, and (2) the reflex action on the heart and blood-vessels generated by peripheral stimulation of cutaneous nerves.

[Dr. Franze here discusses at some length the physiology of the circulation and the part played by the vessels in the distribution of the blood. He then continues as follows.]

In cases of arterio-dilatation the powerful irritation of the skin by the ingredients of the water increases the tonus of the arteries by reflex action; whilst in the less frequent cases of vaso-motor spasm the excessive contraction is relaxed, the result of the baths in either case being a tendency to re-establish the normal optimum. The tension of the easily compressible pulse is better after the bath and the blood pressure rises in cases where it was previously abnormally low. On the other hand, there is decrease of blood pressure and of arterial tension when these have been abnormally high. Concomitant with these vascular changes the baths bring about, by reflex action, more vigorous contractions of the heart, the immediate result being more perfect emptying of the cardiac cavities. Thus is induced a gradual diminution of ventricular dilatation, progressing with prolongation of the treatment even to its entire removal. Now, the removal of dilatation is of paramount importance in all heart affections as it follows from the laws of hydraulic pressure that the heart is overstrained proportionately to its dilatation—viz., a pressure acting upon a fluid is distributed equally through the entire amount; if, therefore, the heart contains just so much blood as it ejects normally at each stroke, it need only do so much work as is necessary in order to press its entire contents into the arteries; but should it be dilated and contain more blood it will have to do proportionately more work even to eject only its normal contents, the rest of its labour being wasted on the remaining amount of blood on account of the equal distribution of the pressure of the ventricular walls through the entire amount of blood contained in the ventricles

As already stated, reaction sets in sooner and more perfectly in a Nauheim bath than with ordinary fresh water, and should its temperature be near the "point of indifference" reaction supervenes with rapidity. Such baths have almost solely a relieving influence on the heart The lower the temperature the longer the period which precedes reaction, the cooler baths having therefore a preliminary stimulating effect which we utilise as an exercise for the heart. Thus, by regulating the temperature and also the carbonic acid and saline constituents we can achieve by these baths an exceedingly accurate dosage of relief or exercise for the heart, and the technical arrangements for effecting these gradations are of the most perfect type I know of no other means by which relief and exercise for the heart can be for weeks administered with such absolute precision. It is, however, here expedient to mention that we usually combine the treatment with medico mechanical gymnastics, resistance exercise, massage, and electrical treatment, including the use of the sinusoidal alternating current.

In selecting cases for Nauheim treatment it is important to bear in mind that less depends upon the cause of the disturbed circulation than upon its degree The baths are equally indicated in valvular lesions, in muscular weakness with dilatation, in arterio-sclerosis, and in 'nervous heart complaints so long as the affection is not too far advanced and so long as the heart possesses that necessary amount of reserve-energy through the stimulation of which the power necessary for maintaining the circulation can be restored Competent observers assure us that they have seen the valvular lesions of a recent rheumatic fever disappear through a course of the baths Patients in whom suspicious cardiac signs succeed an attack of rheumatism are suitable cases for Nauheim, and those with valvular defects may with advantage take baths as a prophylactic while in a perfect state of compensation I have seen very favourable effects in such cases where the dilatation underwent a reduction of from one to two inches during the course Nauheim is also suitable for the earlier stages of non compensation with slight dyspnœa during rest or [illegible] of the ankles, and a sma[illegible] In the medium stages [illegible] dyspnœa, œdemata, and albuminuria the results cannot be foretold with certainty Much depends on the patient's age and certain it is that in such cases digitalis gives better results with the baths than without them For the more advanced stages with ascites and anasarca nothing is to be expected from Nauheim treatment Especially favourable for Nauheim are simple muscular weakness and the earlier stages of dilatation such as too commonly supervene on influenza, enteric fever, and acute rheumatism and are so frequently attributable to alcoholic excess, over-exertion, anæmia, and chlorosis Fatty heart accompanying general obesity is, as a rule, favourably influenced by baths, gymnastics, massage, and dietetic regulations, including the use of the water as a beverage *Pari passu* with diminished dilatation we observe increased muscular vigour and loss of weight

As regards arterio sclerosis, it seems reasonable to assume that the resolving action of the mineral baths may have a favourable influence in incipient stages on the process itself. Such early diagnosis is, however, difficult and usually the patients come to Nauheim when such consequences as cardiac weakness and angina pectoris have begun to manifest themselves In not too advanced stages the action of the baths is often very favourable Patients feel considerable relief and the angina frequently vanishes, the effect being doubtless chiefly attributable to the removal of peripheral circulatory resistance As a class these cases require more than ordinary precaution in grading the degree of effervescence In the later stages of the disease this treatment is of no avail. Practical experience of the action of the waters combined with a knowledge of physiology will in most instances enable a correct selection to be made of the cases which are suitable for treatment at Nauheim

Bad Nauheim.

CONTRIBUTIONS TO THE STUDY OF THE ACTION OF SEA-SNAKE VENOMS.[1]

PART I

BY SIR THOMAS R FRASER, M D. EDIN., F.R S.,
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AND
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MAJOR, I M S., ON SPECIAL DUTY FOR SNAKE VENOM RESEARCH UNDER THE ORDERS OF THE SECRETARY OF STATE FOR INDIA
(From the Pharmacology Laboratory of the University of Edinburgh)

THE only important contributions to the literature of the subject with which we are acquainted are those recently made to the Royal Society by Captain Leonard Rogers, I M S Whilst acknowledging the value of these papers we desire to state that our work was planned before we saw them and has in all respects been independent of them

The venoms used in this research were those of two species of sea snakes (1) that of Enhydrina Valakadien (*a*) expressed in Madras by Dr P P Pinto from the venom glands of freshly killed large snakes and sent to us in the dry state, and (*b*) extracted by us from the dried glands of small snakes which had been collected by the same gentleman, and (2) that of Enhydris curtus prepared in the same way as the first mentioned specimen, of which, however, only a small quantity was procured for us by Dr Pinto

The minimum lethal doses of the various specimens of venom—1 (*a*) Expressed Enhydrina Valakadien venom —

M L D for rats = 0·00009 gramme per kilogramme of body weight
" for rabbits = 0·00006 " " " " "
" for cats = 0·0002 " " " " "

The minuteness of these doses proves that sea snake venom is the most lethal of all substances the lethal power of which has been determined

1 (*b*) Enhydrina Valakadien venom extracted by us from dried glands This proved to possess a lethality rather less than half that of the expressed venom

2 Expressed Enhydris curtus venom The minimum lethal dose for rats was between 0·0005 and 0·0006 gramme per kilogramme The minimum lethal doses for rabbits and cats likewise proved to be higher than those of the enhydrina venom We mention this difference in lethality between Enhydrina and Enhydris venoms without laying stress on it, as we are unable to be certain that it was not due to some change which the enhydris venom had undergone

Comparison of the relative lethality of Enhydrina and cobra venoms for various animals—An active specimen of cobra venom was taken, the minimum lethal doses of which for rats, rabbits, and cats had been found to be 0·0005, 0·0006, and 0·010 gramme respectively per kilogramme of body weight of animal Expressing the smallest minimum lethal doses in the case of each venom as the unit we find the relative lethality for the different kinds of animals to be the following —

Cobra venom	rats = 1, rabbits = 1·2, cats = 20.
Enhydrina venom	rabbits = 1, rats = 1·5, cats = 3·3

The difference in the cat rodent relationship is especially suggestive of a marked difference in the physiological actions of the two venoms and the reversal of the rat rabbit relationship is also of some significance in the same connexion

Symptoms of sea-snake poisoning in animals—In the main these symptoms resemble those of cobraism, but the dyspnœa is more urgent, probably because the heart is not directly affected by the venom as it is in cobraism We have observed that lid rise of the lower lid is a constant sign in Enhydrina poisoning, as it is in the course of poisoning by the venom of the cobra and krait It appears to be produced by an elastic rebound of the lid, caused by paralysis of its depressor muscle, probably central in origin, and it is closely comparable with the ptosis met with in cobraised men and monkeys Of the two points dealt with above, the first suggests a difference between the actions of cobra and Enhydrina venoms and the second a resemblance between their actions

Methods of experiment employed—These were · 1 Perfusion of the frog ventricle with solutions of Enhydrina venom. 2. Perfusion of the vessels of pithed frogs with solutions of Enhydrina venom. 3. Kymographic experiments in which the blood pressure, respiratory movements, &c., were recorded and studied both before and after the intravenous injection of Enhydrina venom. The movements of the auricle and ventricle were also studied during life by removing a portion of the chest wall and attaching levers to the heart by hooks and silk threads. Venom was intravenously injected and the results were recorded and noted. 4. The state of the phrenic, sciatic, and vagal nerve ends was studied immediately on the occurrence of death in animals which had received various lethal doses of Enhydrina and Enhydris venoms. The secondary current was used for this purpose and the distance of the secondary from the primary coil, when a muscular contraction was observed, was noted and stated in millimetres. 5. The medulla oblongata of rabbits was exposed and Enhydrina venom was dropped upon the medulla at the region of the respiratory centre. Respiratory movements were recorded on a drum with the aid of a double stethoscope.

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[1] Abstract of a paper read before the Royal Society on June 9th, 1904.

Summary of results.—1. Enhydrina venom has no direct action on the walls of the arterioles, or at least has no action in any strength of solution which could be present in the blood of a human victim of sea-snake bite.

2. *Enhydrina venom acts directly on the isolated frog* ventricle, producing a tonic and stimulating effect, but this action is produced only by very strong solutions (1 in 5000). The heart beat is quickened and the result is therefore similar to that produced by very weak solutions of cobra venom (1 in 1,000,000 or weaker).

3. By experimenting with the mammalian heart exposed *in situ*, we have clearly shown that Enhydrina venom has no direct action on the vagal cardio-inhibitory centre. This affords a striking contrast to the condition observed in cobra poisoning. In the latter case the powerful tonic and stimulant action of the venom on the heart muscle (or more probably *on its nerve ends*) is masked by equally powerful and direct stimulation of the cardio-inhibitory centre. In Enhydrina poisoning, on the other hand, the complete absence of cardio-inhibition leaves the feeble tonic action on the heart free to manifest itself, as appears to be displayed in several of our tracings. We cannot otherwise explain the increase in rate of the heart beats which we have not infrequently met with in our experiments.

4. Enhydrina venom has apparently no direct action on the vaso-motor centre. Rogers found that on the injection of a viperine venom, or of the venom of the banded krait (Bungarus fasciatus), into an animal a marked fall of blood pressure occurred which was of central origin. In an investigation made by one of us with Dr. W. C. Sillar and Dr. G. S. Carmichael (of the Materia Medica Laboratory, Edinburgh) it was found that a similar and powerful action is exerted by the venom of the common krait (Bungarus cœruleus). The absence of any such action by the venom of Enhydrina is therefore worthy of note.

5. The blood pressure curve in Enhydrina poisoning is a remarkably steady one, provided that moderate doses of venom are given and that care is taken to avoid the injection of large volumes of fluid into the blood-vessels. This is due to the fact that the blood pressure is exposed neither to the influence of the rival forces which act on the heart so strongly in cobraism nor to the direct vaso-motor changes with which we have dealt in the preceding paragraph.

6. The respiratory mechanism is that which is chiefly affected by Enhydrina venom. If large lethal doses are employed, such as Rogers appears to have confined himself to, respiration falls rapidly, and a considerable rise of blood pressure, asphyxial in origin, may precede death. The heart beat then quickly slows and blood pressure falls with corresponding rapidity.

Obviously, these are simply the phenomena of rapid asphyxiation. If, however, smaller doses of venom are employed no marked rise in blood pressure occurs. The ordinary level is maintained until near the occurrence of death; the beat then slows and the blood pressure falls. Here we have an expression of gradual cardiac failure brought about by slowly progressive asphyxiation. The absence in slow Enhydrina poisoning of the large asphyxial rises of pressure, which are so characteristic of the final stages of cobra poisoning, is readily explained by the fact that Enhydrina venom has no direct constrictive action on the walls of the arterioles, such as cobra venom possesses.

7. *As to the part of the respiratory mechanism that is* affected by sea-snake venom, the rapidity with which respiration is affected, both when venom is injected into a vein and also when it is applied directly to the medulla oblongata, leaves no room to doubt that the respiratory centre is directly acted on by the venom. On the other hand, we have shown that some degree of motor nerve-end paresis is constantly present in animals dying from the effects of subcutaneous injections of this venom. We have also emphasised the fact that, in experiments carried out by dropping venom on the exposed medulla oblongata, we have failed to kill animals through the respiratory centre with their motor nerve ends still undamaged. In this respect we have shown that Enhydrina venom differs in its action from cobra venom. It would therefore appear that in poisoning with Enhydrina venom motor nerve-end paresis plays a much greater part than it does in cobraism. It is not difficult to suppose that a blunting of the motor nerve-end mechanism, even though far from absolute, may seriously add to the embarrassment of a centre which has already been directly and gravely enfeebled. We hope to return to this and other points in a future communication.

In conclusion, we desire to express our sense of indebtedness to the India Office, to the Government of India, and last, but by no means least, to the Madras Government, for the assistance and facilities which they have given us in the carrying out of this research.

ON THE ACTION OF THE VENOM OF BUNGARUS CŒRULEUS (THE COMMON KRAIT).[1]

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THE only previously recorded work known to us on this subject was performed by Captain L. Rogers, I.M.S., and his results were publised at the beginning of the present year. Experiments were performed by us in the pharmacological laboratory of the University of Edinburgh with the following results:—

1. We determined the minimum lethal dose of the dried venom for frogs and small mammals, rats and rabbits only being chosen, as our stock of the venom was very limited. We found that the minimum lethal dose for the frog was about 0·0005 of a gramme per kilogramme, for the rat 0·001 gramme per kilogramme, and for the rabbit the remarkably low dose of 0·00008 gramme per kilogramme.

2. We found that Calmette's antivenomous serum in quantities sufficient to protect rats against ten minimum lethal doses of cobra venom in the same quantities was quite powerless to protect these animals from similar doses of krait venom.

3. We studied the condition of various nerve terminals, both in animals that die after poisoning by krait venom and in nerve muscle preparations from the frog, and found that the integrity of these nerve ends was invariably involved at a comparatively early stage in the poisoning.

4. The blood was carefully examined and no evidence of ante-mortem clotting or intravascular hæmolysis was discovered.

5. We examined the action of krait venom when its solution was perfused through the isolated vessels and heart, respectively, of the frog. We found that this venom, while resembling in action that of cobra venom, differs greatly in the degree of constriction of vessels and enhancement of ventricular contraction produced. Cobra venom exercises an action in these directions many times greater than that of krait venom. (Cardio-plethysmographic tracings were shown.)

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[1] Abstract of a paper read before the Royal Society on June 9th, 1904.

[2] On special duty for snake-venom research, under the orders of the Secretary of State for India.

6 Studying the manner in which the vital functions of mammals (rabbits, cats, and dogs) were influenced when exposed to the action of this venom we found that the vaso-motor centre was strongly affected, a suspension of the activity of this centre, as shown by the great splanchnic dilatation, rapidly ensuing after its transient stimulation There were also indications of a feeble cardio inhibitory action The experiments and illustrative tracings likewise showed that death was brought about by destroying the activity of the respiratory centre (Kymographic and plethysmographic tracings were shown)

7 From these results the conclusion may be arrived at that while the symptoms produced by krait poisoning are similar to those of cobra poisoning, they differ so much in relative degree as to render it doubtful if they can properly be spoken of as identical

A CASE OF CHRONIC STREPTOCOCCUS ENDOCARDITIS TREATED BY SERUM SPECIALLY PREPARED BY USE OF THE ORGANISM OBTAINED FROM THE PATIENT.

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THE success attending the introduction of antitoxic sera into therapeutics led to an expectation that equally good results might follow the use of bactericidal sera As yet, however, these hopes can scarcely be said to be realised. Excluding the cases in which the disease may fairly be claimed to be sapræmic in nature and those in which the bacteriological evidence is absent or incomplete there remain very few, if any, in which the presumption is at all strong that a cure is to be attributed to the use of immune serum Both to the clinician and to the student of immunity the question, How much of the recovery from septicæmia or pyæmia may fairly be credited to the serum used and how much to time and the patient's natural defensive mechanism, is beset with many difficulties But since experience teaches us that in septicæmia a natural cure is rarely to be expected, the results of our researches into immunity being what they are we feel bound to give immunised sera a wide and prolonged trial in cases coming under our care To report only our successes is calculated to give us a false notion of our advance in the matter of serum therapy To report our successes in cases the real nature of which is unknown can only lead to confusion

There is no better instance at the present time of the fact that we can only expect any advance in treatment by using all the available methods which we possess in diagnosis Forgetting this primary principle of our profession, we are prone to rush to the exhibition of a serum as soon as any "septic" case is presented to us On the score of expense alone it is certain that we waste many litres of bactericidal sera, our patients' pockets and our hospital funds being the poorer in consequence But the expense entailed to our methods of practice is much more serious It is time that we stemmed the tide of this indiscriminate serum therapy

The immune serum for which the best results have been claimed in the treatment of disease is the antistreptococcus serum Its failure in many cases may be due to a variety of causes One of these causes, and probably a very important one, may be that the serum employed is not immunised against the particular streptococcus causing the disease but against a different streptococcus This consideration involves the question of the unity of the streptococcus as a pathogenic organism—a question which entails too many matters of a purely bacteriological nature to be entered into here Suffice it to say that streptococci from different sources are often found to show such varied biological characters as to suggest that [illegible] or miss ' character of the remedy.

The ideal serum for the treatment of any particular patient suffering from streptococcus infection must be one obtained by the use of the organism actually causing the disease in that patient, for this serum can alone be guaranteed to be specifically associated with the causal agent of the disease To obtain this ideal serum we have but two alternatives open to us—either we must possess certain trustworthy tests whereby we can recognise the particular streptococcus obtained from the patient, so that we may choose a serum already at hand and produced by the use of that organism, or we must specially prepare the serum by the use of the very streptococcus which we have obtained in the course of our bacteriological diagnosis of the case At present the first alternative is not possible, although we may hope that it will shortly become so. But even when these tests are established we shall have to wait until the various pathological streptococci are subjected to them before we can utilise the right serum, and we shall doubtless now and again encounter an [illegible] um has hitherto been produced [illegible], of preparing a special immune se[illegible] consideration—is only practicable in cases where the duration of the disease extends over at least eight weeks, since this interval would seem to be necessary before the serum of a horse inoculated with a streptococcus is likely to contain anti-bodies of sufficient strength to make it of therapeutic value, nor does there seem at present to be any way of shortening this interval Now cases of general streptococcus infection of sufficiently long duration to promise any success from this method of treatment are not common, yet they exist in fair numbers, especially in the form of ulcerative endocarditis The case reported in this article is an instance, the disease lasted over six months When the nature of the infection was discovered by means of a blood culture the various antistreptococcus sera on the market were tried (Pasteur Institute, Lister Institute, Burroughs, Wellcome, and Co, and Parke, Davis and Co) but without success A specific immunised serum was then obtained from two animals by the use of the patient's particular streptococcus, and this serum was freely used

The case is recorded because I believe it to be the first of its kind, if not the first of any kind, in which treatment has been by serum thus specially prepared Another reason for recording the case is that the treatment formed a somewhat crucial test of bactericidal serum therapy, and its failure makes it highly probable that there are important factors in such cases or in the production of the immune serum of which we are at present quite ignorant Reference will be made later to some of the questions suggested by the case and its treatment

Clinical history of the case —The patient, an unmarried woman, aged 25 years, had been well until August 8th, 1903, when she consulted her medical attendant for shortness of breath and chilliness of the extremities She was somewhat anæmic No heart murmur was heard She was seen from time to time until the 30th, when she was found to be in a very nervous condition, with tachycardia, exophthalmos, marked tremors, anæmia, and a soft blowing bruit in the region of the apex of the heart, well conducted into the axilla There was no thyroid enlargement Graves's disease was diagnosed and the patient was confined to bed The chief complaint at this time was of flying pains in the limbs There was no rise of temperature until Sept 16th, when the thermometer registered 101° F in the evening From this day until the fatal termination of the illness six months later fever was present continuously

On Oct 1st the cardiac bruit was noticed to be much harsher and on the night of the 2nd there was a rigor On [illegible] was [illegible] gors [illegible] ring [illegible] the bruit was noticed The spleen was impalpable, the urine was natural, and there was no œdema A diagnosis of ulcerative endocarditis following on Graves's disease was made. On Nov 10th I saw the patient in consultation with Dr C G B Kempe of Salisbury The diagnosis was confirmed and a blood culture and leucocyte count were carried out On the 17th I saw her again A few small scattered petechiæ had occurred over the neck and the chest, rendering the prognosis more grave

On Jan 6th, 1904, I saw the patient for the third time The petechiæ had increased somewhat in number but were at no time very numerous On Feb 16th Dr. Kempe noted the presence of a soft but distinct murmur over the pulmonary area of the heart with fresh crops of petechiæ On March 7th an attack of dyspnœa, with signs of consolidation at the base of the left lung, suggested the presence of an infarct at this situation. At midday on the 22nd the patient died somewhat suddenly. The total duration of the illness was thus over seven months and the duration of the fever was over six months. The form of the fever for the great part was remittent, the temperature ranging between 101° and 103·5.[1]

The leucocyte count.—On Nov. 10th this was 14,000 per cubic millimetre, and at a second count on Jan. 5th it was 12,000. This absence of a marked leucocytosis is not uncommon in chronic cases of ulcerative endocarditis, even when of streptococcal origin.

The blood culture.—On Nov. 10th five cubic centimetres of blood were withdrawn from a vein of the arm with aseptic precautions and three broth and three sloped agar tubes were inoculated. On the second day growth appeared in the broth and on the agar and this was found to be a streptococcus in short chains. One cubic centimetre of a 24 hours' subculture in broth killed a mouse in two days. Dr. M. H. Gordon had in hand at this time an investigation into the streptococcus group of organisms for the Local Government Board, with the object of obtaining differential tests if such existed and for this purpose he was trying the effect of streptococci on a medium containing one or another of a series of carbohydrates. A number of examples of streptococcus pyogenes tested in this way were found to conform to a definite type. I am indebted to Dr. Gordon for a similar examination of the streptococcus obtained in the blood culture from this patient; the organism was found to show a distinct variation from streptococcus pyogenes. Moreover, the organism was found to change neutral red, a chemical test not yielded by streptococcus pyogenes.[2] Cultures obtained on one occasion only from the patient's throat, though they yielded a variety of streptococci, gave no organism fulfilling the same series of reactions as that obtained from the blood. Nor could I prove on either of two occasions that the streptococcus of the blood was being excreted in the urine.

The serum treatment.—1. Various sera on the market. These were given as soon as the result of the blood culture was known. All the "polyvalent" sera obtainable were given a good trial in turn. After the second dose of Pasteur Institute serum the temperature fell and there was no rise for over 48 hours. This was the only occasion in the course of the illness when the fever abated for more than six hours. But this apparently good result was not maintained even though the dose of serum was much increased. The Lister Institute serum and the sera made by Messrs. Borroughs, Wellcome and Co. and by Messrs. Parke, Davis and Co. produced no result. This treatment was continued for seven weeks. 2. Specially prepared sera. On Jan. 9th Dr. W. Dowson kindly placed a donkey at my disposal at the Wellcome Physiological Research Laboratories, Brockwell Hall, and himself undertook the necessary inoculations. Increasing doses of living cultures of the streptococcus were given at intervals of from one to nine days, followed at the end of eight weeks by two large doses (200 and 250 cubic centimetres) of cultures digested in horse plasma with one week's interval. Following each injection enormous swellings were observed at the seat of inoculation, often involving the whole of one side of the trunk. The animal was bled before the first inoculation and at the end of the first week, as well as on four occasions further on in the process of immunisation. The object of the first two bleedings was to obtain normal serum from the same animal furnishing the immune serum, it being thought advisable to first use this as a control, in case positive results were obtained with the immune serum. Previously to this, however, the patient was injected with 30 cubic centimetres of human serum, obtained by bleeding a brother, as it was possible that the absence of sufficient complement might be in a measure responsible for the protraction of the disease. The injections at this time therefore comprised the following series: normal human serum, normal donkey's serum, immunised donkey's serum removed at intervals up to nine weeks from the beginning of inoculation. The treatment was continued over a period of more than two months, during which time some 550 cubic centimetres of serum were given. The great bulk of the serum was administered subcutaneously or intramuscularly. At no time did the temperature chart suggest that there were any good effects from the treatment.

Shortly after Dr. Dowson had commenced the inoculations at Herne Hill Dr. George Dean of the Lister Institute kindly undertook to treat a horse with the streptococcus with a view to obtaining immune serum. Four injections of 10 cubic centimetres, 20 cubic centimetres, 50 cubic centimetres, and 100 cubic centimetres of living cultures in horse serum bouillon were given, the horse being bled three weeks after the last injection was made. After each dose there was a marked reaction at the seat of inoculation with a rise of temperature. The serum yielded by this horse was likewise given a good trial but with equally disappointing results.

General and drug treatment.—When the nature of the case was established open-air treatment was adopted as far as possible and at one time some benefit appeared to result from this expedient. Besides this and a carefully chosen nourishing diet with stimulants (chiefly as port wine) the following drugs were prescribed: quinine in five-grain doses every four hours, sodium sulphocarbolate up to 15 grains every four hours, and formaldehyde in doses of from two to four minims by the mouth frequently. Each of these drugs was given a full trial in turn.

I have already indicated the main points of interest connected with this case. Not allowing for factors at present unknown to us, the possible explanations of the failure of the serum treatment seem to be these: 1. The infection was a mixed one, the streptococcus only having grown in the blood culture. This I think unlikely. Cases of ulcerative endocarditis due in part or in whole to other organisms than the streptococcus usually run a much more rapidly fatal course. Moreover, this explanation includes the notion that the streptococcus present was little or not at all pathogenic, a notion not supported by general experience or by the animal experiments carried out with the organism. Unfortunately no post-mortem examination could be obtained in order to decide this question. 2. Neither of the sera specially obtained possessed the "immune body," or possessed it in too small a degree to be of service to the patient. If this were so the chance of any serum, not specially obtained, containing the immune body needed for the treatment of a particular case must be much more remote than we at present imagine. 3. The patient's blood was deficient in the "complement" necessary to fix the "immune body." This accident seems to be an unlikely one at any time. But it was with the view of meeting it that the normal human serum was used. It would doubtless have been a reasonable thing to continue the injections of human serum for a longer time than was done. But this treatment is as yet scarcely within the range of practical therapeutics.

Whether the prolonged course of the disease was in any way due to the treatment by serum and, if so, to which serum it was due, are questions that cannot be answered.

In conclusion, I must express my thanks to Dr. Kempe, without whose constant and valuable coöperation the prolonged and systematic treatment could not have been carried out; to Dr. Dowson at the Wellcome Laboratories, who responded most promptly to my suggestion concerning a special serum; to Dr. Dean for similar assistance at the Lister Institute; and to Dr. Gordon for the part of the bacteriological investigation mentioned above.

Harley-street, W.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

NOTE ON THE VALUE OF KADER'S OPERATION OF GASTROSTOMY.

BY J. CRAWFORD RENTON, M.D. EDIN.,
SURGEON AND LECTURER ON CLINICAL SURGERY, WESTERN INFIRMARY, GLASGOW; FORMERLY EXAMINER IN SURGERY AND CLINICAL SURGERY IN THE UNIVERSITY OF EDINBURGH.

HAVING performed this operation four times recently, I think it right to record my satisfaction with it, both as regards rapidity and ease in carrying out the details and its efficiency as a means of feeding the patient and insuring no escape of fluid from the stomach even when coughing.

The usual incision for gastrostomy is made. Having opened the abdomen, four retaining loops of silk are passed

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[1] As the temperature chart measures some 20 feet in length it cannot be reproduced here.

[2] Centralblatt fur Bakteriologie, Band xxxv., No. 2, p. 271.

through the peritoneum and placed equidistantly round the
ig applied to each This
down when the stomach is
mach, as near the cardiac end
as possible are drawn out, the peritoneum and aponeurosis are carefully stitched to the stomach, using a Reverdin's curved needle, the stomach is then opened and a No 12 soft catheter is introduced and fixed in position by a fine suture which passes through the whole thickness of the stomach wall and is tied tightly round the catheter The stomach is now invaginated by pressing upon the firmly secured tube and a purse string suture is introduced a quarter of an inch below the opening into the stomach *This is drawn up and tightened round the tube*, a second purse string suture is introduced half an inch below the *first, the stomach being further invaginated* and the stitches tightened around the tube, a third purse string is introduced half an inch below the second if necessary and tied round the tube In this way a valve is formed inside the stomach so that the tube can be easily passed in and when *removed the valve comes together and completely* closes the opening The skin incision is united with silk worm gut. After the wound is healed the patient soon *learns to feed himself Having first chewed the food he* passes it into the tube which is inserted into the stomach Those interested in this subject will see two good plates illustrating the operation in Kocher's recent work on Operative Surgery translated by Stiles

Glasgow

A CASE OF INJURY TO THE BACK FOLLOWED BY ALL THE APPEARANCES OF SYRINGOMYELIA

BY CHARLES MACKIE BEGG, M B, L R C P EDIN

HOUSE SURGEON BOROUGH HOSPITAL BIRKENHEAD

A MAN aged 37 years was struck on the back by a sack of corn which fell from a height of over 30 feet He was admitted to the Birkenhead Borough Hospital on June 6th the day of the accident. There was severe bruising over the back of the neck and chest No irregularity of the vertebral column could be discovered and there were no symptoms pointing to any injury of the spinal cord The patient was a very powerfully built man and stated that he had previously enjoyed perfect health

Recovery *went on apparently uninterruptedly till June 12th* when he complained of some weakness in the arms and legs On examination the knee jerks were found to be brisk On the 20th th
thenar and
was distinct
was some di
both sides His condition became worse, the spasticity of *his legs increased and the wasting of the muscles of the fore* arms and hands became very marked On the 30th his condition was as follows In the upper extremities there was marked wasting of the small muscles of both hands and of the flexors and to a lesser degree the extensors of the fore arms The pronators and supinators were very slightly if at all affected The biceps triceps and deltoid were slightly wasted but not nearly to the same extent as *the muscles of the forearm* The affected muscles reacted sluggishly to electricity Both biceps and triceps jerks could be elicited There was no impairment of any of the senses in the arms In the lower extremities the muscles were spastic both knee jerks were much increased the ankle and patellar clonus was marked and Babinski's plantar reflex was present in both feet With great difficulty the patient c
hes from the
bed There
on
sensations
to pain was diminished in both legs and the
between heat and cold was not appreciated There was some weakness of the abdominal muscles, the patient being quite unable to sit up in bed The bladder and rectum were unaffected

The further progress of the case was as follows On July 8th the patient could sit up in bed without assistance and his grasp was slightly stronger There was some fibrillary twitching of the tongue and his speech was not so distinct as before There was no improvement in the wasted muscles of the hand

The case
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sion
was evidently in the seventh and eighth cervical and first
the cause
producing
of the arms
and by its pressure causing
pyramidal tracts? If so the
myelitis must have cut off the
and cold and pain senses from the lower limbs It is possible that the patient may have had a dilatation of the central canal previously This may have caused no symptoms till *the blow on the back* produced effusion or slight hæmorrhage into the cavity

I am indebted to *Dr W R Floyd under whose care* the patient was for permission to use these notes

Birkenhead

A Mirror

OF

HOSPITAL PRACTICE,

BRITISH AND FOREIGN

> Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias tum aliorum tum proprias collectas habere et inter se comparare —MORGAGNI *De Sed et Caus Morb* lib iv Proœmium

ST GEORGE'S HOSPITAL

NINE CONSECUTIVE CASES OF PERFORATED GASTRIC ULCER TREATED BY SUTURE IRRIGATION, AND DRAINAGE

(Seven under the care of Mr G R TURNER and two under the care of Mr T CRISP ENGLISH, eight recoveries)

FOR the notes of the cases we are indebted to Mr Crisp English

CASE 1 —The patient, a woman aged 24 years, was admitted to hospital under the care of Mr Turner on Nov 28th, 1900 with the following history At 9 P M on the previous evening she was frightened by a mouse and immediately after was seized with acute epigastric pain followed by vomiting On admission she looked extremely ill and was in great pain The temperature was 99 5° F and the pulse was 120 The abdomen was rigid distended and tympanitic Acute tenderness was present in the epigastrium Liver dulness was absent

Operation —Median laparotomy was performed above the umbilicus Gastric perforation was found on the anterior surface of the greater curvature near the œsophageal end There were much foul fluid and lymph in the peritoneal cavity The perforation was closed and a counter opening was made below the umbilicus Three drainage tubes were inserted On the fourteenth day after operation thrombosis occurred in the left calf, convalescence was otherwise uneventful and the patient went to the Wimbledon Convalescent Home on Jan 9th

CASE 2 —The patient was admitted to hospital under the care of Mr Turner on March 5th, 1901 with a history of *acute abdominal pain for two days* The pain had been sudden in onset and was situated in the epigastrium, the abdomen had become distended and vomiting had occurred twice On admission the patient who was sent by rail about 100 miles to hospital, looked very ill complaining of great pain and thirst the marked abdominal facies was present the temperature was 97° F and the pulse was 130
ntly distended chiefly in the lower
lle, very tender, and rigid Liver
There was moveable dulness in the
flanks

Operation —A median incision was made Intense general
peritonitis was
fluid
and free gas le
a the
anterior surface
end
As the patient's condition was very bad a gauze plug was passed to the perforation and the peritoneal cavity was flushed out with hot saline solution drainage tubes were inserted and the wound was sutured Death occurred a few hours later

Feb. 12th he was a good deal better mentally. He had several attacks of diarrhœa, with intervening constipation, but no blood, pus, or mucus was passed. He was sick after most articles of food now. His temperature was as before. He was treated with high-frequency currents until vomiting returned. On the 29th he was better mentally and was only sick occasionally; he often had diarrhœa. An examination was made under chloroform but nothing definite was felt in the abdomen. He seemed very weak and was losing weight; six pounds were lost in a week.

The patient went on in this condition, gradually getting weaker and thinner, for about a month. The stools were loose and there were occasional diarrhœa and sickness. The abdomen gradually presented more evidence of disease, consisting of slight general distension, some rigidity of the recti, and a feeling of increased resistance or thickening about the intestines, chiefly in the umbilical region. These signs became more marked towards the end. There was no ascites. He was very apathetic and did not complain of anything. It was thought probable that he had some abdominal tuberculous mischief and the use of tuberculin was suggested, but the man seemed too ill for injections to be given. At 6 A.M. on March 27th Dr. Short was called to see him as he had become speechless and pulseless and lay with his legs drawn up slightly groaning. The abdomen was more distended, especially in the epigastric region, and universally tender. It did not move with respiration. There was no shifting dulness in the flanks. The liver dulness had become reduced to one inch instead of three inches as previously. There was no vomiting or diarrhœa. The temperature was 95° and the extremities were cold. In spite of stimulant treatment he did not rally and died at noon.

Necropsy.—At the post-mortem examination the body was found to be much emaciated and the skin was dry and scaly. The heart and lungs were normal except that at the apex of the left lung there was a small radiating scar with slight thickening of the pleura; there was no caseous matter. There was general peritonitis, with universal injection of the intestines, lymph flakes, and soft recent adhesions. The peritoneum contained one and a half pints of semi-purulent fluid. In the small intestines there were numerous ulcers, the ileum. About six of these were — ; three would only just admit a lead pencil and the bowel was dilated above them. Several of the ulcers were very large, up to one inch in breadth. They ran transversely. The edges were thickened and raised, sloping off on the sides. The floor of many of them was dense and firm owing to cicatricial tissue. In some, however, it was very thin and in two a small perforation had occurred. In several a few tubercles were seen in the serous coat in the periphery. The stomach was markedly dilated. The large intestine showed chronic catarrh. The mesentery was thickened; the mesenteric glands were large, red, firm, and in two cases calcified but not caseous. The liver, spleen, kidneys, pancreas, testicles, and brain were practically normal.

Remarks by Dr. MICHELL CLARKE.—On admission there was obviously a slight degree of obstruction and peristaltic movements of the intestine were visible, though not very marked, through the abdominal walls. These symptoms were accompanied by pronounced nervous ones which took a typical hypochondriacal form. A few days after admission the signs of obstruction became less and the peristaltic intestinal movements disappeared, never to return in the further progress of the case. Simultaneously the hypochondriacal symptoms gradually developed, so that for some time the patient could not be considered as mentally sound. The mental symptoms and the appearance of the patient were at this time those of hypochondriacal insanity. Vomiting now returned with pronounced anorexia and considerable persuasion was required to make the patient take his food. At one time it was thought that forced feeding would have to be resorted to.

The vomiting, emaciation, and anorexia, in the subsidence of the more marked intestinal symptoms which were present on admission, might now, perhaps, have been attributed by anyone who saw the patient at this stage for the first time to the nervous condition except for two signs—namely, the constant presence of liquid stools and the gradual appearance and increase of a feeling of thickening or resistance to pressure in the abdomen. Later in the case there was the remarkable clearing up of the mental condition, whilst the signs of abdominal disease became quite evident and unequivocal. The illness was one well illustrating the not infrequent coexistence of abdominal disease with symptoms of hypochondriasis and the very great difficulty there often is in cases of hypochondriasis in which the patient's feelings and thoughts are centred on his stomach in arriving at a positive conclusion as to whether there is or is not some abdominal disease in the background.

Other points of interest are the apparently primary origin of the ulcers, unless indeed, the scar at the apex of the lung represented old healed phthisis, and the strictures and perforation due to tuberculous ulceration.

Medical Societies.

OBSTETRICAL SOCIETY OF LONDON.

Complete Inversion following Traction on the Cord after a Normal Delivery.—Exhibition of Specimens, &c.

A MEETING of this society was held on July 6th, Dr. EDWARD MALINS, the President, being in the chair.

Dr. ROBERT BOXALL recorded a case in which Complete Inversion followed Traction on the Cord after a Normal Delivery in a Young Primipara. The uterus was pushed back into the vagina. An unsuccessful attempt at re-inversion was made within a few hours and again 48 hours after delivery. Some retained portions of placenta and membranes having been removed and the parts cleansed it was decided to defer any further attempt for a few weeks. Douches were used night and morning. Six weeks later the uterus was found to have regained its normal position. It seems probable that this occurred during the third week, as at that time there were a certain amount of abdominal pain, free red discharge, and pyrexia for a few days which could not be otherwise accounted for. The extreme rarity of spontaneous re-inversion and the action of the douche as a factor in causing reposition were remarked upon.—Dr. A. L. GALABIN and Dr. HERBERT R. SPENCER discussed the case and Dr. BOXALL replied.

Dr. A. H. N. LEWERS showed a specimen of Fibroids and Carcinoma of the Body of the Uterus removed by panhysterectomy from a patient 45 years of age. A lump had been noticed in the abdomen for six years. For two years there had been a constant vaginal discharge but no severe loss. Pain in the lower abdomen had been quite a recent symptom. On vaginal examination a blood-stained offensive discharge was seen issuing from the os uteri. The vaginal portion was normal. The sound passed eight inches. At the operation the body was removed with the intention of leaving the cervix but on cutting through the cervix at the level of the internal os malignant growth (which had not previously been suspected) was found in the lumen. The cervix was consequently removed. Dr. Lewers urged the advisability of opening up the body of the uterus immediately after removal in all cases where fibroids existed, for in his experience malignant growth in the endometrium is not very rarely a complication of uterine fibroids.—Dr. SPENCER preferred total hysterectomy to amputation for fibroids.—Dr. AMAND J. MCC. ROUTH did not consider that cancer was relatively so frequent in fibroid uteri as in cases where no fibroids were present. He regarded metrorrhagia after the menopause in a woman known to have had a fibroid as strong presumptive evidence of cancer having developed. In such cases he advocated panhysterectomy.—Dr. GALABIN thought that fibroids predisposed to cancer and that in all cases of fibroids in which continuous or irregular hæmorrhage could not otherwise be cured in a moderate time the uterus ought to be removed.—Dr. MARY A. D. SCHARLIEB regarded panhysterectomy for fibroids as the best operation both for immediate and for remote results.—Dr. LEWERS, in reply, said that he thought it best in operating for fibroids to leave the cervix if healthy at the time of operation.

Dr. A. W. SIKES showed three Skull-caps of Children illustrating Variations of the Posterior Fontanelle.—Dr. BOXALL remarked on the frequency with which deviations from the normal type of posterior fontanelle occurred.

Dr. WALTER W. H. TATE showed a specimen of Fibromyoma associated with Cystic Disease of the same Ovary removed by operation from a patient, 71 years of age. For two years there had been pain and progressive enlargement of the abdomen and occasional vaginal hæmorrhage. The tumour consisted of two distinct parts: a solid portion of the size of a foetal head which appeared to grow in the wall of the cystic tumour and a cystic portion the wall of which was inflamed and lined by lymph The solid portion proved to be a fibromyoma with necrotic changes towards the centre —Mr **ALBAN H G DORAN** referred to a similar case which he had published

Mr **DORAN** and Dr **H WILLIAMSON** showed a specimen of Necrobiotic *Uterus* associated with *Recent Pregnancy* removed from four to five months after delivery from a patient aged 38 years The specimen was discussed by Dr **ROUTH** Mr **A C BUTLER SMYTHE**, and Dr **J S FAIRBAIRN** and Mr **DORAN** replied

Dr **FRANK E TAYLOR** showed a specimen of Fibroma of the Ovary removed by Mr J Bland Sutton from a *sterile married woman aged 50 years who complained of* severe dyspareunia of many
showed no sign of disease
outer pole of the left ovary
densely hard and lobulated
white surface It measured two and one sixth by one and three quarter inches and weighed two and a half ounces —Dr **FAIRBAIRN** agreed that this was probably an example of the rarest form of ovarian fibroma springing from the tunica albuginea and not from the ovarian stroma —The specimen was referred to the pathological committee

Dr **M S PEMBREY** *and* Dr **G BELLINGHAM SMITH** exhibited five Foetal Sacs which had been found free in the abdominal cavity of a rabbit They were seven or eight centimetres in length four or five centimetres in width, and two centimetres in thickness The largest contained four foetuses, the development of which showed that they were at full term The sacs were formed of the foetal membranes thickened by fibrinous exudate, the placenta could be seen but its maternal surface had been covered over by a similar deposit The *amniotic fluid had been absorbed and the foetuses were com*pressed The abdomen of the mother showed well marked signs of former peritonitis but there was no evidence of placental attachment The uterus on careful examination showed evidence of a former rupture in the shape of an old scar at the junction of the two uterine horns The foetuses had evidently been retained for at least eight months before the animal was killed for during the time it was kept in the laboratory it produced four normal litters The rupture was *probably caused by the impaction of the four* foetuses which were found in one sac and which showed signs of torsion The case supports the view of Mr Bland Sutton that such foetal sacs are not due to extra uterine pregnancy but to rupture of the uterus and extrusion of the sacs into the abdominal cavity

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EDINBURGH MEDICO CHIRURGICAL SOCIETY

Exhibition of Cases — Associated Transposition of Viscera and Cerebral Tumour —Metastatic Gonorrhoeal Conjunctivitis —Suppuration in the Frontal Sinus

A MEETING of this society was held on July 6th, Professor **JOHN CHIENE** the President being in the chair

Mr **H J STILES** showed a girl aged seven years after operation for Cyst of the Mesentery Though chiefly situated in the epigastric region the cyst extended below the left costal margin It was firmly united to the muscular coat of the intestine and was formed of fibrous tissue covered with peritoneum

Dr **EDWIN BRAMWELL** showed a man aged 34 years suffering from Paralysis of Accommodation in the Right Eye neither pupil reacted to light the left contracted fairly well but the right not at all on accommodation A very careful examination had failed to elicit any further evidence of disease The patient had had syphilis six years previously For several years past he had been using the watchmakers eyeglass for six hours a day and always with the right eye The case was of interest in connexion with Edinger s theory of the etiology of tabes dorsalis Edinger supposes that syphilis acts as a predisposing cause and that superadded excessive function determines the special neurons to be affected in different cases

Dr **W ALLAN JAMIESON** showed a case of Hypertrophic Acne Rosacea after treatment The hypertrophied tissue was simply shaved off with a razor under the action of adrenalin and cocaine The result was very satisfactory He also showed a case of Lupus of the Hard Palate treated by Radium The lupus had existed for five years and had involved the nose the upper lip the gums and the hard palate as well as the axilla X ray *treatment* had cured the face and the arm but it had little effect on the palate Radium bromide inclosed in a tube with an aluminium window was applied for 22 hours to the palate with the result that an entire cure followed

Mr **F M CAIRD** showed a man after removal of a large Renal Tumour (nephroma) The patient also suffered from heart disease ascites and bronchitis His condition was very precarious An enormous tumour was enucleated through a lateral incision It was an adrenal tumour which had engulfed the whole of the kidney Mr Caird also showed a woman aged 54 years, after removal of a large Carcinoma of the Transverse Colon under local anaesthesia Bruits were present over every valve of the heart ascites and bronchitis were present as well as diarrhoea and pronounced anaemia A tumour as large as the fist was removed and end to end suture was performed, the patient only experiencing a dragging sensation during the operation There was no evidence of heart failure

Other cases were shown by Mr **J W DOWDEN**, Dr **R A FLEMING** Mr **J M COTTERILL**, and Mr **A A SCOT SKIRVING**

Dr **W G SYM** *showed Axenfeld s instruments* for use in excision of the lacrymal sac and Priestley Smith s balance for testing the points and edges of cataract knives

Sir **THOMAS R FRASER** read notes of a case of Complete Transposition of the Viscera with Cerebral Tumour and other Pathological Conditions He said that already in 1888 he had described such a case discovered during *the life of a female patient who suffered from cardiac* valvular disease The present case, however, differed from *the former in that the malady from which the patient* suffered ended fatally so affording fuller opportunity for the study of the malformation When first admitted to the Edinburgh Royal Infirmary the patient was a well nourished man, aged 24 years, rather stunted in growth (8 stones 7¾ pounds in weight and 4 feet 11 inches in height), with a round bullet shaped head and stolid expression The primary cause of his admission was a long standing pyuria with headache His father died at the age of 72 years from *bronchitis and his mother died from phthisis at the age* of 62 years Three brothers and five sisters were alive and healthy There was no family history of nerve disease nor had the patient suffered from venereal disease He was unmarried and until a few years ago had followed the occupation of an iron moulder, while latterly he had been employed in a warehouse Both occupations necessitated his lifting heavy weights He had not suffered from any serious illness until the present symptoms began to show themselves now several years ago Some eight years previously he had fallen from a swing and had sustained some injury *to the head though the effects* soon wore off His recollection of this injury was very imperfect A supernumerary thumb was present on the right hand springing from the metacarpo phalangeal joint Six metacarpal bones were present in this hand Physical examination showed that there was a transposition of the thoracic and abdominal viscera and the patient himself was aware of his abnormality To determine if the transposition involved the lowest portions of the alimentary canal as well as the higher two pints of warm water were injected into the rectum with the result that the sigmoid flexure became *dull to percussion in the right flank* A presystolic mitral murmur with accentuation and reduplication of the second sound was also discovered and there was congenital loss of the sense of smell This anosmia was a hereditary or *family defect as it was present in the mother* as well as in a brother and two sisters He was again admitted to the Royal Infirmary in January 1904 At this time the sub occipital pain was more severe than formerly and sensations of formication numbness and tingling in the legs were present Tactile sensibility was somewhat blunted over the left side the vision was much impaired so much so that with the left eye ability to distinguish light from darkness alone remained Death took place on the fourteenth day after admission His temperature throughout was always below the normal and before death it was 97°F The post mortem examination confirmed the diagnosis of complete transposition of the viscera The caecum had the foetal characteristics of conical shape and small size and these characteristics were also manifested in the unusual length and upright position of the appendix vermiformis. Pyelitis was also present. In the brain at the level of the lateral ventricle a translucent rounded tumour of about the size of a large marble was found which gave a complete explanation of the symptoms present. The heterotaxy of the viscera involved not only the important organs but also all the underlying organs and structures, as bronchi, blood-vessels, and nerves in the thorax and the pancreas, duodenum, blood-vessels, and nerves in the abdomen. Dr. Richter published in 1884 a collection of 40 cases, of which 24 were examined after death. Of the latter 17 exhibited complete heterotaxy. In only one was the subject left-handed and cardiac lesions existed in six of the 24 examined after death.

Dr. SYM read a report of two cases of Metastatic Gonorrhœal Conjunctivitis. He pointed out that in the gonorrhœal conjunctivitis produced by direct infection the characters were those of an intense purulent ophthalmia with great swelling of the eyelids, affecting one eye at first, with abundant discharge of pus and great danger of severe ulceration of the cornea. In the metastatic form, on the other hand, the discharge was somewhat thin mucoid fluid, there was very little swelling indeed, if any, and the iris or the cornea might be affected, but only to a very unimportant degree relatively; the attack was apt to come on along with joint symptoms and in persons who had been most careful to avoid the risk of direct infection. The first patient was a young man who had acquired gonorrhœa three months previously; he had practically quite recovered under treatment in about two months, but the discharge from the urethra again began, this time spontaneously (it was not a re-infection) and almost at the same time several joints became affected, and well-marked conjunctivitis came on with fairly abundant discharge. There was, however, very little swelling of the tissues; neither was the symptom at all comparable in degree to that present in a case of direct infection. The irides were slightly injected also. The left ankle and wrist were affected by synovitis and to a less degree the right wrist also. There were at the moment no facilities for bacteriological examination. The other patient was a young man whose gonorrhœa (a first attack) was of four weeks' duration; it had been treated from the first and was never very bad. Conjunctivitis had existed for three days before Dr. Sym was consulted and was not severe at all; the discharge contained no pus and there was no great injection of the globe. In two or three days several joints began to be affected one after another. Bacteriological examination showed very few organisms indeed and it was with the greatest difficulty that a few gonococci could be identified. The disease appeared to be rare and in some even of the latest text-books was not mentioned at all. A very useful paper on the subject was read by Dr. van Moll of Amsterdam at the Utrecht meeting of the International Ophthalmological Congress in 1899. He had met with six cases occurring in three individuals; the symptoms observed by him were precisely similar to those now described. He, Parinaud, Morax, Sattler, and Lichtenstein have all had cases in which no gonococci whatever were found; indeed, in this disease, as in rare instances of other forms of conjunctivitis, cases have been examined in which no germs of any kind were discoverable in the discharge. The most probable explanation of the disease was that it was due to the toxins generated by the gonococcus, but another theory, founded upon the frequency with which staphylococci were found, was that the original urethral mischief was due to a mixed infection of gonococci and staphylococci and that the former were unable while the latter were able to penetrate the unbroken epithelial surface. Morax has succeeded in producing a precisely similar form of inflammation by introducing into the conjunctival sac a dead culture of gonococci, a fact which seems strongly to support the toxic theory.

Dr. A. LOGAN TURNER read a paper on the Operative Treatment of Chronic Suppuration in the Frontal Sinus. He said that many operations had been devised but whatever might be the technique of the operation performed there were two principles underlying the various methods of procedure. First, opening the sinus through its anterior wall, curetting the cavity, and draining into the nose—an operation associated with the name of Ogston-Luc; and secondly, obliteration of the sinus by the removal of the anterior bony wall of the cavity only or of its anterior and inferior walls. Evidence was then brought forward to show that opening and draining the sinus constituted in a large number of cases an unsatisfactory procedure. Statistical tables were shown illustrating the failures that had occurred in the hands of different surgeons and a table was given showing how much more frequently death had followed the operation of opening and draining the sinus than when the obliteration method had been carried out. The obliteration operation was then considered and the better results thus obtained were demonstrated. The question of comparative disfigurement in the two operations was discussed and illustrated by results of operative interference. Finally, the Killian operation was described, its merits were discussed, and the hope was expressed that it might be recognised as an improvement in dealing with these cases.

WINDSOR AND DISTRICT MEDICAL SOCIETY.—A meeting of this society was held at the Guildhall, Windsor, on June 29th, Mr. W. B. Holderness, the President, being in the chair.—Mr. W. A. U. Thomson showed an extreme case of Cretinism in a male, aged 19 years, who was the sixth child of a family of ten children, the other nine being healthy. He had the appearance of a backward child seven or eight years of age. The case had been under the care of Mr. Hastings Gilford of Reading.—Dr. F. J. Hathaway showed three cases, one of them being an example of Charcot's Disease of the Knee in a male, aged 50 years. The joint was distended with fluid and well-marked symptoms of locomotor ataxy were present.—Dr. Clive Riviere read a paper on Conditions simulating Pulmonary Tuberculosis in Children. After speaking shortly of acute tuberculosis and tuberculous broncho-pneumonia, Dr. Riviere passed on to consider those varieties of pulmonary fibrosis and bronchiectasis which simulate phthisis in later childhood. Phthisis, he held, was rare in childhood but bronchiectasis and fibrosis were perhaps commoner than was generally admitted. Whooping-cough was the commonest factor in the production of the slighter forms, the cough and bronchitis leading to bronchiectasis which in some instances became permanent. The most marked cases were usually the result of broncho-pneumonia (especially when complicating whooping-cough), croupous pneumonia, or pulmonary collapse. It was the apical cases which tended to simulate phthisis but even the basal cases might give rise to doubt. The prognosis of chronic apical disease in children was remarkably good, partly because a considerable proportion of such cases was not tuberculous.—Dr. Hathaway read notes of a case of Ruptured Tubal Gestation. The patient, who was under the care of Dr. H. Overy, was aged 35 years, had been married 13 years, and had had no children. She had missed her periods for three months and during the last ten days of the pregnancy she had had attacks of bleeding from the vagina with pain in the lower part of the abdomen and back. The onset of violent pain with collapse was quite sudden. Vaginal examination showed the cervix uteri to be soft and the os not dilated. Dr. Hathaway opened the abdomen below the umbilicus and fluid blood was found in the peritoneal cavity. The uterus was enlarged, and attached to the right broad ligament was a mass of the size of a hen's egg which proved to be a typical gestation sac situated in the ampullary portion of the Fallopian tube. The broad ligament was transfixed close to the uterus and securely ligatured in three pieces with silk, then the mass with the ovary was removed, and the uterus and stump of the broad ligament were allowed to drop back into the pelvis. The patient was rather collapsed after the operation but soon rallied satisfactorily and the subsequent progress of the case left nothing to be desired.

OPHTHALMOLOGICAL SOCIETY.—The last ordinary meeting of the session was held on July 9th, Mr. John Tweedy, the President, being in the chair.—Dr. George Coates gave a lantern demonstration on the Pathology of Thrombosis of the Central Vein of the Retina. He showed preparations from five cases. In four of these an organised thrombus was found in the central vein; in three of them complete obliteration of the vein in a portion of its course had occurred from this cause; and in one of them the manner of re-establishment of the lumen by the accession of collaterals from the trabeculæ of the nerve was well shown. In the fourth case canalisation and not obliteration of the thrombus had occurred. In the fifth no thrombus was found, probably because the optic nerve was cut longitudinally in the usual manner and not transversely as was desirable when a lesion of the central vessel was suspected. He also dealt with the changes found in the retinal vessels of these cases—namely, (1) endothelial proliferation; (2) thickening of the connective tissue of the walls; (3) hyaline degeneration (a change superimposed on the last); and (4) secondary thrombosis. Various combinations of these changes might be found both in arteries and veins. The use of Weigert's elastic tissue stain in researches on vessel changes was also illustrated.—Dr. Hermann Knapp (New York) commented on the ophthalmic appearances which were of such great value in prognosis and which could be seen with such remarkable distinctness, such as the white artery with its least little thread of blood, the white retina in its track, and the scotoma [illegible] ld of vision. He recalled an [illegible] ch for a distance equal to [illegible] the disc one vessel showed [illegible] they entirely disappeared, the scotoma vanishing as the retina became red again The consequences of endarteritis supplied one of the most important chapters in ophthalmology and neurology. He was accustomed to warn patients who showed these changes of their liability to apoplexy unless they simplified their mode of life and diet. In one case where the warning was neglected the patient returned in three weeks with right hemiplegia but subsequently recovered and was now living on a spare diet. This applied also to Bright's disease with retinal changes. Meat and alcohol must be avoided.—Card specimens were shown by Mr. R. Marcus Gunn, Dr. R. D. Batten, and Dr. E. J. Smyth.

Reviews and Notices of Books.

A Manual of Medical Jurisprudence, Insanity, and Toxicology. By HENRY C. CHAPMAN, M.D., Professor of Institutes of Medicine and Medical Jurisprudence in the Jefferson Medical College of Philadelphia. Third edition. With 64 Illustrations and 4 Plates in Colours. London, Philadelphia, and New York: W. B. Saunders and Co. 1903. Pp. 329. Price 8*s*.

THIS work is probably better known in America than in England. The fact, however, that this is the third edition since the book was first published in 1892 is sufficient evidence that the efforts of the author have met with due appreciation. Dr. Chapman, as "coroner's physician of the city of Philadelphia," has had a large practical experience in forensic medicine and is therefore able to refer to many cases which have come under his own observation. He has also the power to express his opinions in a brief but lucid manner, so that although the manual is not a large one nevertheless it contains all the main facts of which it is essential that a student should be aware when presenting himself for examination. In describing the method of conducting post-mortem examinations in medico-legal cases Dr. C[illegible] on the importance of establish-[illegible] glect of such a precaution has [illegible] legal difficulties. The remarks on "identification" are too curtailed and might well be *amplified in future editions.* The chapter on the examination of blood stains contains a full description of the technique which should be employed in order to ascertain whether certain stains are due to blood or to some other fluid. The attempt to distinguish between human blood and that of some animal is generally attended with failure but Dr. Chapman refers to the "serum test" which has recently been suggested. We agree *with his conclusion that it is* doubtful whether even the presence of blood could be satisfactorily established by the "precipitum" test with the kind of material suspected to be blood that is usually submitted to the medical expert for examination, and in the event of that test proving the presence of blood it is still more doubtful whether the differentiation between animal and human blood could be *established to the satisfaction* of the court.

The medico-legal aspects of wounds, burns, scalds, cold, and starvation are all briefly considered, as are also the other subjects which must of necessity find a place in a text-book on medical jurisprudence. Dr. Chapman properly considers that the subject of insanity has so extensive a range as to render it impossible within the limits of a small work to do more than to indicate its salient features and to dwell more especially on those points which particularly come under the notice of the medical jurist. The portion of the book dealing with toxicology gives a description of those poisons most frequently met with. If an account of the rarer ones is required it would be necessary to refer to one of the larger works dealing with this subject.

As a small treatise on medical jurisprudence Dr. Chapman's *manual may be favourably recommended. It is in no* sense a "cram-book," neither does it contain such detailed descriptions or discussions as are to be found in the more elaborate publications, but a much larger amount of information is contained in it than would appear by a cursory glance through its pages

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System of Physiologic Therapeutics. Edited by SOLOMON SOLIS COHEN, M.D. Vol. VII.: Mechanotherapy and Physical Education. With 229 Illustrations. London: Rebman, Limited 1904. Pp. 420. Price 12*s*. 6*d*.

THE present volume, the seventh of that excellent therapeutic series which is under the general editorship of Dr. S. S. Cohen, *is concerned with a branch of therapeutics for* which it is difficult to find an adequate title. Perhaps it would have been impossible to find a better title than the one which has been adopted—namely, "Mechanotherapy and Physical Education" At any rate, this description conveys the suggestion which is required by the character of the work—namely, that the medical treatment described is in no way concerned with drugs and that the surgical treatment is unconnected with the knife.

As would naturally be expected, a very considerable part of this volume is devoted to the subject of massage, its principles, methods, and applications, and this part of the work, which represents about a quarter of the whole volume, is from the pen of Dr. S. K. Mitchell who, as lecturer on massage in the Philadelphia Orthopædic Hospital and Infirmary for Nervous Diseases, has had wide practical experience of his subject In the wording of the directions supplied for carrying out the various forms of massage no trouble has been spared to insure simplicity and exactness of statement and there is hardly a phase in the manipulative procedure which is not further elucidated by excellent illustrations. It is impossible in a short account of this contribution to do justice to the thoroughness with which the work has been completed or to indicate the large amount of ground covered. Dr. Mitchell is naturally an enthusiast with regard to this physical method of therapeusis. We cannot help thinking, however, that his readers will be disappointed *if they expect* always to meet with the success which it would be gathered from reading his account is to be anticipated from the skilful application of even the best methods of massage. In the second section, written by Dr. Mitchell, exercise as a remedial measure is described; from the practitioner's point of view this part of the book will be found particularly valuable for the purposes of reference, for all the *better known* methods are described and their advantages and disadvantages are reviewed, while the diseases which are benefited by particular systems of exercise are arranged in a sufficiently methodical manner.

To the second half of the volume Dr. L. H. Gulick has contributed a brilliant, though somewhat theoretical, article on Physical Education. He treats the whole subject on the broadest basis *and on* philosophical lines. He insists from a consideration of our ancestral history and of the conditions of our present environment that exercise is necessary for our health and for our comfort. He further insists that the whole tendency of modern civilisation is to deprive us of inducement to exercise our muscles and to substitute temptations for the expenditure of nervous energy. "The conditions of human life," he says, "in civilised countries have changed more since the development of the steam-engine than they had for thousands of years previously." Again, recognising the fundamental truth that form depends on function, he points out the very serious consequences which this deprivation of exercise has had, and is having, on the physical structure of our bodies. Passing from the general to the particular, Dr. Gulick describes how the physical development of our bodies may best be attained and what exercises to employ to secure the best results. The whole of this article is, indeed, well worth reading. More practical, but hardly so interesting, are the chapters by Dr. J. K. Young on Orthopædic Apparatus, by Dr. H. A. Wilson on Corrective Manipulation in Orthopædic Surgery, with a well-illustrated account of Lorenz's bloodless method of reduction of congenitally dislocated hips, and by Dr. Walter L. Pyle on the Physical Methods employed in Ophthalmic Therapeutics. The last-named article is exceedingly well done and it is very suggestive of the advantages which properly adjusted exercises may confer on the development of the eye in its normal function and consequently on its structural formation. The correction of squint by stereoscopic exercises without surgical interference is, indeed, one of the striking examples of the success of mechanical methods as opposed to ordinary cutting operation. The many new mechanical methods, of which this is but a single example, which have recently swelled our list of therapeutic measures justify the publication of a volume on the subject of treatment without drugs or the knife.

Guide to the Analysis of Potable Spirits. By S. ARCHIBALD VASEY, F.I.C., F.C.S., &c. London: Baillière, Tindall, and Cox. 1904. Pp. vii.-87. Price 3*s.* 6*d.* net.

THIS work comprises within a small compass all the essentials connected with the analysis of spirits and shows how from the results obtained the analyst may deduce an idea as to the origin of any sample which he examines. The book is divided into ten chapters and an appendix the first and second chapters and the last deal with generalisations.

Chapter III. deals with Methods of Analysis and these, generally speaking, are based upon the French official methods, which it is pointed out are not always beyond scientific reproach although most of the work which has been done upon the subject has been executed by Frenchmen according to French official methods and published in the French language. So many analyses of potable spirits have been published that there is at the present time very little trouble in finding out whether a spirit is *not* that which it purports to be, though, on the other hand, it is possible that the more astute dishonest dealer may so "doctor" his spirit as to make it conform to *analytical* standards. Chapter IV. is concerned with the Estimation of Aldehydes and Acids and on p. 31 undoubted preference is given to Rocque's method of making up the standard solution of the former by means of aldehyde ammonia. Mr. Vasey recommends the separate titration of the fixed and volatile acidity in view of the fact that the whole original acidity of a spirit must be due to volatile acid. In Chapter V. the author considers the Estimation of the Higher Alcohols and here he has to decide between the various processes which have been described. On the one hand, there are the superior scientific claims of the Dupré-Marquardt-Allen process; while on the other, there is the official recognition in certain countries of the Röse-Herzfeld method and of the method of colouration with strong sulphuric acid. The last method has, at any rate, the advantage that results obtained by it can be compared directly with the numerous French analyses at our disposal. Respecting compound ethers, the estimation of which is treated of in Chapter VI., the interfering effect of aldehydes is mentioned; this may doubtless be a disturbing influence in some spirits—notably in "marc" brandies—but may usually be disregarded. One advantage of the latter procedure is that comparison can then be directly made with most of the French analytical results. In Chapter VII. the Estimation of Furfural is described at some length and Chapter VIII. deals with the Importance of Taste. This chapter is less technical than the rest and the analyst is recommended to cultivate his senses of taste and smell. There is no doubt that expert tasters can detect admixture of spirit from different sources which would escape the average consumer. If the analyst can add to his chemical attainments some of the knowledge of a spirit connoisseur he will make himself an even greater terror to evildoers than he is at present. A description of colorimeters and a collection of spirit analyses occur at the end of the book. In Chapters I., II., and IX. the author expresses his belief in the possibility of judging of the origin of a spirit by the estimation of the bye-products; he is an equally firm believer in the propriety of a purchaser being supplied with that for which he asks.

The book will we think prove of interest to all those concerned in the analysis of spirits.

Précis des Maladies des Enfants. (Compendium of the Diseases of Children.) By Dr. L. BAUMEL. Paris: F. R. de Rudeval. 1904. Pp. 606. Price 8 francs.

THIS volume is one of a medical series which is now being published in Paris under the title of "La Bibliothèque des Précis de Médecine." It is, however, underrating the scope of Dr. Baumel's book to regard it simply as a compendium, for while it can hardly claim to be considered as a text-book it is in many respects much more than what is usually understood by a "précis." It consists of 600 pages of closely printed matter and contains a few illustrations, charts, and diagrams. The general character of the work is clinical rather than scientific or theoretical. There is little recognition of extraneous authority, especially that of English and American origin, and there is a considerable amount of originality. Dr. Baumel is clearly not afraid of his own shadow and he expresses views on the etiology and pathology of chorea, epilepsy, and certain other conditions which, to say the least, are refreshingly unconventional. The original manner in which he views many of the commonplace accidents of childhood renders his book far more interesting reading than is usually the case with works which are of the nature of systematic compendiums. Although it is perhaps hardly fair to the author to say that he is faddy on certain points we may at least without disrespect suggest that he has very strong views on certain subjects—to wit, the pathological disturbances which are referable to dentition and the value of the incubator for the rearing of delicate infants. As regards the use of the incubator the author is of the opinion that the majority of congenitally weak infants (*faiblesse congénitale*)—a class of infants in whom he evidently takes the greatest interest—could be saved if they were kept warm in incubators and fed properly by the breast. There can be no doubt that the thermotaxic centres of the modern infant are quite incapable of maintaining the bodily temperature under the slightest condition of cold—a fact which is abundantly shown by the frequency with which cold feet complicate the difficulties of treating most cases of congenital or acquired "feebleness of infants," so that we cannot help thinking that Dr. Baumel is serving the cause of the infant by demanding in a manner which some readers may regard as unnecessarily insistent that the temperature of the infant shall be maintained at all costs—by incubation *if no other means secure this end.*

In the first chapter, which treats of the general hygienic management of infants, there are several points which naturally strike the English reader as a little behind the times—for instance, it is surely an abuse of terms to describe milk which has been sterilised and diluted with water as humanised milk (“*lait maternisé*”). On p. 13 appears a weight chart of an infant fed for some months on the breast and then transferred to the artificial substitute; the sudden fall in weight and its continued retrogression are very suggestive of the inappropriateness of the title “*maternisé*” for milk of this kind and yet this is practically the only suggestion for the artificial feeding of infants which appears in this volume.

In Chapter IV. (Part I.), a section which describes hæmophilia and Barlow's disease, there are one or two points which confirm our general suspicion that the nature of these diseases is very little appreciated by French physicians. The classification seems altogether confused in this volume. Barlow's *disease, which we in this country consider so peculiarly* amenable to treatment, is spoken of as a very dangerous condition and Henoch's purpura is either not mentioned or is described under the heading of Werlhof's disease. Again, in the section which deals with rheumatism, while the joint manifestations and the ordinary acute variety are fully described, the more ordinary phenomena of the “status rheumaticus” to which we in this country attach so much importance are only incidentally referred to in scattered portions of the text. The chapter on Dentition we regard as one of the best, as it is certainly one of the most original. This so-called physiological process is made responsible for a large number of what are usually regarded as independent accidents—chorea, for instance—but, taken as a whole, we regard this volume as well worth reading.

Clinical Lectures and Essays on Abdominal and other Subjects. By H. D. ROLLESTON, M.A., M.D. Cantab., F.R.C.P. Lond., Physician to St. George's Hospital, &c. With illustrations. London: Sidney Appleton. 1904. Pp. 178. Price 5s.

Dr. Rolleston may be congratulated on the production of a book extremely convenient in form and interesting in contents. None of the chapters are long, the subjects dealt with are very diverse, the manner of writing is clear and brief, and the matter chosen is either interesting from the rarity of the cases discussed or else of great moment from their commonness. The subjects of most importance include ascites, gastric ulcer, and typhoid fever. The interesting rarities are Recklinghausen's disease, persistent hereditary œdema, and progressive myositis ossificans. That Dr. Rolleston is thoroughly at home in the discussion of the etiology and pathology of these unusual conditions everyone familiar with his pathological work will readily understand. In dealing with the more common conditions above mentioned Dr. Rolleston has wisely adopted a practical point of view and offers several suggestions as to treatment which if not always in accord with the usually adopted routine have *the advantage of being at any rate founded on reflective and* logical reasoning. In the management of cases of gastric ulcer he is emphatic on the importance of the state of the mouth and on the possible harm from allowing even plain water by the mouth. Similarly in the case of typhoid fever Dr. Rolleston supports a starvation policy during the height of the fever, allowing, that is, only plain water in considerable quantities by the mouth. He “distrusts the value of alcohol in large quantities” and believes in the hypodermic use of strychnine and in the adminis*tration of small doses of liquor hydrargyri perchloridi.* Dr. Rolleston wisely recommends, however, that an open mind should be kept in the treatment of cases of typhoid *fever, and considers that a routine system is inadmissible,* seeing that the patient and not the disease should be especially the object of attention. Space forbids us to discuss the author's recommendations with regard to vomiting in diphtheria and in cases of gastric ulcer, tapping for ascites, and many other important points, but we can cordially recommend to students and practitioners the perusal of this little work as an easy road to some sound knowledge.

JOURNALS AND MAGAZINES.

The Journal of Physiology. Edited by Sir MICHAEL FOSTER, F.R.S., and J. N. LANGLEY, F.R.S. Vol. XXXI., Nos. 3 and 4. London: C. J. Clay and Son. June 30th, 1904. Price 8s.—These numbers contain the following articles: 1. Some Researches on the Autolytic Degradation of Tissues, Part I, by Janet E. Lane-Claypon (Mabel Webb research scholar) and S. B. Schryver. The authors of this article find that there is a large degradation of tissue shown by the increase in the nitrogenous extractives in all tissue hitherto investigated during the first 24 hours of incubation, amounting in the case of the liver to more than 50 per cent of the total in many instances. Three stages are as a rule observable—a latent or very gradual period, a period of rapid disintegration, and a period of slower but uniform autolysis. As neither perfusion nor ammonium oxalate affects it and as it is not influenced by the substitution of saline for distilled water it is probably a pure chemical function of the cell protoplasm. It is greater in *a fasting than in a well-fed animal. Comparing this* degradation with the action of trypsin on the liver, the authors arrive at the conclusion that the organ (liver or kidney) of the fasting animal contains a larger amount of either enzyme or zymogen which acts as a protection against starvation. 2. On the Secretion of Acid by the Kidney, by Arthur A. Cushny, M.D. 3. Studies on the Maintenance of the Equilibrium of Motion and its Disturbances, so-called “Forced Movements,” by L. J. J. Muskens, M.D. Amsterdam. The author discusses the causes of “rolling movement” and “circus movement” both in invertebrata and in various vertebrates. 4. On the Relationship of the Thymus to the Sexual Organs, by James Henderson, M.R.C.V.S. The author states that castration causes a persistent growth and a retarded atrophy of the thymus gland in cattle, guinea-pigs, and rabbits. In bulls and unspayed heifers the normal atrophy of the thymus which begins after puberty is greatly accelerated, providing that the bulls have been used for breeding and when the heifers have been pregnant for several months. 5. The Composition of Pancreatic Juice, by Lucian A. E. de Zilwa, B.Sc.Lond. 6. A Pseudaffective Reflex and its Spinal Path, by R. S. Woodworth, Ph.D., and C. S. Sherrington, M.D.Cantab., with 12 figures in the text. 7. On the Question of Commissural Fibres between Nerve Cells having the same Function and situated in the same Sympathetic Ganglion and on the Function of Post-ganglionic Nerve Plexuses, by J. N. Langley, F.R.S., with two figures in the text. 8. The Innervation of the Sphincters and Musculature of the *Stomach, by W. Page May, M.D.Lond., with six figures in* the text. The author of this communication finds that the vagus contains easily demonstrable motor and inhibitory fibres for the musculature of the stomach. The splanchnics, on the other hand, have no influence upon the gastric musculature. The effect of stimulation of the vagus on the musculature as well as on the sphincters is first inhibitory and then augmentative. 9. Antiperistalsis and other Muscular Activities of the Colon, by T. R. Elliott, M.A., and E. Barclay-Smith, M.D.Cantab., with five figures in the text. *These numbers also contain the Proceedings of the Physiological Society for March 19th and May 21st, 1904.*

application of remedies to the human body. We may conclude by saying that we have the highest appreciation of the work that is being done under the auspices of the Fund. We hope that it will be fruitful in results. His Majesty the KING has again given proof of the great interest which he feels in the matter by sanctioning the addition of the word Imperial to the title of the Fund which therefore in future will be known as the Imperial Cancer Research Fund.

Health and Education.

THE reception by Lord LONDONDERRY of the great deputation that waited upon him on Monday, in order to present a petition as to the teaching of hygiene which had been signed by nearly 15,000 medical practitioners and to enforce its recommendations by argument, is an event of good augury to the profession. It seems to indicate the approach of a time when medical men, as practically the sole custodians of forms of knowledge essential to the public weal, will not only assert their claim to be heard with deference and attention upon many subjects of importance which for the present are mainly left under the sway of ignorance, but when this claim will be freely admitted by responsible statesmen and will be rendered operative in the departments of public activity which they control. The petition itself was couched in terms so wide as almost to elude controversy and set forth that the petitioners, having constantly before them the serious physical and moral conditions of degeneracy and disease resulting from the neglect and infraction of the elementary laws of hygiene, urged the central educational authorities of the kingdom to consider whether it would not be possible to include in the curricula of the public elementary schools, and to encourage in secondary schools, such teaching as may, without developing any tendency to dwell on what is unwholesome, lead all the children to appreciate at their true value healthful bodily conditions as regards cleanliness, pure air, food, and drink. The petitioners admit that pupils may now receive teaching on the laws of health by means of subjects almost invariably placed upon the optional code, but to this system they demur as being at least inadequate. They maintain that the teaching should be compulsory and that it should be given at a much earlier stage than at present and they append to the actual petition a few paragraphs describing what is now done in the indicated direction in our own army schools, in several of the colonies, and in some foreign countries. Finally, having regard to the fact that much of the degeneracy, disease, and accident with which medical men are called upon to deal is directly or indirectly due to the use of alcohol, and that a widespread ignorance prevails concerning not only the nature and properties of this substance but also its effects on the body and the mind, they urge upon the authorities the importance of including in the simple hygienic teaching sought for elementary instruction at an early stage on the nature and effects of alcohol. The recommendations of the petition, as will be seen from our report, were strongly pressed upon the attention of Lord LONDONDERRY by Dr. R. FARQUHARSON, M.P., Sir WILLIAM BROADBENT, the President of the British Medical Association, and others.

Lord LONDONDERRY, after an appreciative reference to the tone of the petition and to the character of the deputation presenting it, and after expressing the desire of the department under his control to do whatever might be possible in the directions indicated by the petitioners, made an interesting reference to the question of physical degeneracy. He did not know, he said, whether the petitioners as a profession were prepared to affirm the opinion held in some quarters that there is a serious decline in the physical powers of the people, and, if there were such a decline, he feared that it would be impossible for the Board of Education alone to arrest it. But it was the fact that a competent committee had for some months past been investigating the alleged facts as to physical deterioration and he had every reason to think that the conclusions and advice of that committee might be available at no distant date. If it should prove to be the case that such deterioration as might exist was confined to certain sections of the population and was distinctly traceable to certain social or economical conditions, even then, although the work of the schools might do something, the Board of Education would require the coöperation of other agencies in order to bring about a remedy. The safe rule never to prophesy unless you know is one that is early grasped by everyone who is intrusted with ministerial responsibilities; we are therefore not without hope that the extent of the alleged degeneracy has been at least somewhat exaggerated by alarmists. We do not on this account, however, regard the position of the petitioners as being weakened in the slightest degree. For more than 30 years the country has been spending enormous sums of money upon schools and the control of this expenditure has frequently been vested in persons not possessing any discoverable qualification for the proper discharge of the duties committed to them. The general result has been that the children have been crying for bread and we have given them a stone. They have had schooling instead of education and the schooling has closely conformed to the terms of the general confession in the Liturgy. It has left undone nearly everything which it ought to have done and it has done a great many things which it might with advantage have omitted. It has not guided the average working-class boy towards the acquirement of a useful industry or towards a proper appreciation of his duties as a citizen of a great empire. It has not given the working-class girl an inkling of the duties of wifehood or of maternity. Its faults have been largely due to the popular election of local school authorities and to the piteous striving of the baser sort of politicians to please the most ignorant and the least estimable of their constituents. The medical profession has now made an effort to lift the whole question on to a higher plane, to declare *ex cathedrâ* what it is that the children want and in what manner their wants can be most effectively supplied. We trust that the better class of public opinion will before long be enlisted on the side of knowledge against ignorance.

Lord LONDONDERRY called attention to the difficulty arising from the fact that at present there is not an adequate supply of teachers qualified to impart the instruction asked for by the petitioners, but held out hope that this difficulty was in process of being overcome. It does not arise for the first time, for it will be remembered that when the first Adulteration Acts became law there were not analysts enough to carry out their provisions. Even when the teachers are provided it will be necessary to avoid cherishing undue expectations as to the immediate results of their work. They will have to begin at the very beginning and more than one generation must be expected to pass away before any fruit of their labours becomes apparent; before the working classes are more cleanly in their persons, their dress, and their habitations; and before knowledge and appreciation of domestic comfort are at all extensively diffused. Underlying the educational problem we have the still more serious and pressing one of housing; until the wage-earners can obtain better and cheaper habitations than are now usually accessible to them even a sound theoretical knowledge of the laws of health would have to fight against terrible disadvantages. The same consideration applies to teaching about the effects of alcohol. Even when all illusions concerning its food value have disappeared the labouring man or woman will still know by experience that it affords at least a temporary relief from the pains of indigestion or a temporary forgetfulness of the ills of poverty. The way in which it has been singled out by the petitioners gives some colour to the suggestion that he movement as a whole has been captured by teetotalers anc that it may be in some danger of being injured by exagg ation. That this danger is not visionary is sufficiently shown b the example of the United States, where a teetotal organisati has mastered the educational authority and has been al to force upon the schools so-called hygienic text-books wi are only teetotal pamphlets in disguise and which have npelled instructed physiologists to refuse to take part in hing which they cannot recognise as being under the g ance of facts. A very instructive report on this subjec l on American hygienic teaching generally, prepared by s ALICE RAVENHILL, was published two or three years by the Sanitary Institute of Great Britain.

Deaths in Childbe a Preventable Mortal

THE important question of the mo that has long occupied the minds of childbed is one concerned with the care of parturient those who are It is a mortality which is the more to bing-in women. been shown by the results obtained in lying-red as it has almost entirely preventable. Well may we as itals to be why has it not been prevented in private pris be so, same extent? It is high time that some serio the should be made by the legislature, the medical p-upt and all concerned to put an end to such a painful s, of lives, a sacrifice which is the more terrible whe realise that some 4000 women die annually in England Wales in childbed, about half the number falling victims the ravages of puerperal fever. Dr. W. WILLIAMS has done well to devote the Milroy lectures to a consideration of the various factors concerned in producing this serious mortality. It is important in comparing statistics of the mortality in childbirth during the last 50 years to bear in mind the fact that since 1881 the registration of this form of death has been much more satisfactory than previously, but allowing for previous fallacy from this source there is no escaping the fact, as Dr. WILLIAMS *points out, that during the last* 40 years upwards of 40 per cent. of the total childbed mortality has been due to septic diseases. Further than this, this undiminished rate of mortality has been sustained for a period of 20 years and the sources of fallacy are not confined to one or two years. It is possible, of course, that this undiminished mortality is the direct result of the improved certification of the causes of death and is more apparent than real. At the same time there can be *no doubt that the death-rate from such diseases in lying-in hospitals* has been reduced almost to the vanishing point and therefore the undiminished mortality rate must be due to deaths occurring outside these institutions—viz., in private practice.

An examination of the figures for the different groups of registration counties shows that the death-rate from puerperal septic diseases is highest in the hilly districts of the counties lying west of a line drawn from the mouth of the Severn to that of the Tees. A further examination of the results for the Welsh counties undertaken by Dr. WILLIAMS tends to show that, while the mortality from puerperal fever and the accidents of childbirth is excessively high in both North and South Wales, density of population does not seem to be a factor of much importance. On the contrary, the mortality from puerperal fever and from the accidents of childbed shows a marked tendency to prevail in those counties which have in common the features that they are mountainous, hilly, and sparsely populated, and that therefore locomotion is difficult and medical assistance is not easy to obtain. A more detailed investigation of the registration county of Glamorganshire, which is partly composed of mining districts and partly of agricultural areas, leads to the conclusion that puerperal fever often, though by no means always, selects for its ravages the most insanitary districts, while in the densely populated mining districts the mortality from both the accidents of childbed and puerperal fever is very high indeed. What possible explanation is forthcoming of this high mortality? Dr. WILLIAMS is inclined to take the view that while part of it is to be explained by the large number of untrained women who practise as midwives in these districts and the difficulties of obtaining skilled medical assistance, yet that the exceedingly hard lot of many of these poor women is an additional reason why they are unable to resist the inroads of the disease when they are exposed to its infection. An investigation of the mortality rates from puerperal infection and from the accidents of childbirth in many of the large towns and industrial and mining centres in England and Wales tends to show that the same high rates prevail in most of the mining and industrial centres. What are the other causes which can account for this excessive mortality e? Is it due to ignorant midwives? Is it due to the ct of aseptic and antiseptic precautions on the part of ttending these women? Or is it due to unnecessary b ce with the *normal course of labour? Dr.* WILLIAMS wi hesitation in coming to the conclusion that mid- susta most important part in the causation of this acciden lity rate from puerperal sepsis and from the dbirth. With what safety women can be attended by skilled midwives is admirably illustrated by the statistics furnished in the lectures of the results obtained in the extern maternity department of the General Lying-in Hospital where in 23 years (1880–1902) there were 29,346 deliveries and only three deaths, or a mortality rate of 1 in 10,000. If the happy day ever arrives when all midwives are properly trained and sufficiently skilled there is no reason why equally good results should not be obtained throughout the country.

If we admit that the cause of the present high mortality is mainly the untrained midwife we must ascertain our duty in the matter. This is by no means a new question but is one which has troubled the minds of thinking men for many years. It is by an extension of the methods which have answered so admirably in the case of lying-in hospitals that we must try to find an answer to the problem. In other words the solution lies in the better training of medical practitioners and of midwives, but especially of the latter. But how is the efficient training of midwives to be insured? The new Midwives Act doubtless represents an endeavour to deal with the matter although it contains no hint as to how the desirable end is to be obtained. Indeed, recent proceedings of the Central Midwives Board would seem to indicate that the only real source of training, instruction, and supervision—that to be derived from the medical profession—is to be minimised if not ignored. And where are the funds for the proper training of these women to come from? Will they be provided by the charitable public? It must be remembered that in foreign countries such training is provided free by the State. In this country we can only depend on the hope that private and public benevolence will as usual come to the rescue and provide the funds required for the purpose of supplying women with the necessary training. Dr. WILLIAMS's own suggestion is that a National Council should be formed for the purpose of undertaking the proper distribution of trained midwives throughout the country districts and of collecting funds. It should, he thinks, help to found training scholarships, to give grants to districts too poor to support a midwife, and to start a national training hospital for midwives. It is possible that in the course of time the necessary training, which may well be, as it has been, termed of a technical nature, will be taken up by the various county councils and similar public bodies. The Glamorganshire county council is already undertaking something of the kind and it is to be hoped that other county councils will follow its good example. In the meantime the Milroy lecturer has done well in again calling attention to the deplorable sacrifice of valuable lives which still occurs and his eloquent facts and figures will encourage a hope in the minds of our readers that the Midwives Act *if only it can be properly and efficiently carried out* may prove a blessing to thousands of poor women in country districts. It is sad to think that a work which is essentially on affecting the State as a whole will be handicapped want of sufficient funds to carry it out. Surely he something which should appeal to the thousands of mothers who have the inestimable benefits of medical attendance and of first-rate nursing in th he their travail. We cannot believe that they wi needs of their poorer sisters and we hope that a day may at last come when the present deplorable mortality from a preventable disease such as puerperal fever will no longer exist as a lasting disgrace to our boasted twentieth century civilisation.

Annotations.

"Ne quid nimis."

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

THE most remarkable feature of the recent election of three members of the Council of the Royal College of Surgeons of England was the heavy poll. We complained in a recent issue of THE LANCET that the Fellows seemed hardly to appreciate the privileges which they possess, for at last year's election only about half of the Fellows exercised their right of voting, but we must confess that at this election the Fellows have by no means been backward in recording their votes. There are on the register of Fellows 1302 names; of these 182 Fellows are abroad, in the colonies, or serving in the navy, army, or Indian medical services, the addresses of 15 Fellows are unknown, and one Fellow is not yet entitled to vote, so that there remain only 1104 available voters, and of these 819 recorded their votes; this gives a percentage of over 74 and there are few electoral bodies which could sh a higher percentage of votes than this. For the R al College of Surgeons itself it establishes a record whi will not soon be beaten. The highest number of Fellov voting at any previous election was in 1901 when 768 vot papers were received. As is now the rule, very few F ws voted personally, for only 16 attended for this purpo The result of the election differed slightly from the fo ast which we had made, though we had predicted the urn of Mr. H. Gilbert Barling of Birmingham and had ggested that Mr. A. A. Bowlby would very probably prov ccessful. We congratulate Mr. Frederic S. Eve on his tion and feel sure that he will worthily represent important medical school with which he is connec We must, however, express our surprise and regre at Mr. C. H. Golding-Bird was not successful. should have thought that such a medical school uy's could have made Mr. Golding-Bird's election cer We may, however, express our sincere hope that he ove successful at the election next year—for we trust he will then again offer himself as a candidate for t ffrages of the Fellows. As on former occasions th ere many plumping votes. The largest number of were given to Mr. Eve who received 53 plumpers and ontributed greatly to his success, for only 18 those recorded in favour of his votes excep r. Barling received 42 plumpers and most Mr. Golding-B obably recorded by provincial Fellows. of these w on seems to be very prevalent amongst the The curio "plumping" more than one vote can be given voters th but it is not so; to plump for a candidate to a ca ly one vote. In one way it is fortunate that gives otherwise the work of the scrutineers, which is it is ans a sinecure at present, would be greatly in- by We give below fuller particulars of the election ere contained in THE LANCET of July 9th:—

	Votes.	Plumpers.
Mr. Barling	400	 42
Mr. Bowlby	327	 8
Mr. Eve	313	 53
Mr. Golding-Bird	265	 25
Mr. Bland-Sutton	251	 32
Mr. Bruce Clarke	212	 8
Mr. Harrison Cripps	170	 7

819 votes were received, of which 16 were personal votes

and 803 came by post, but one vote was invalid and five were received too late The following numbers of votes recorded for the last ten years—i e, since voting papers have been sent to all Fellows—may prove of interest 1895, 681, 1896 619, 1897 655, 1898 677, 1899, 493, 1900, 713, 1901 768, 1902 743, 1903 665, and 1904, 819 In the evening of the election day a dinner of the Fellows was held in the College building The Fellows' dinner was years ago a highly appreciated institution but it was never before held in the College itself More than 100 Fellows were present on this occasion and a very pleasant evening was spent The recent additions to the museum were on view and also many of the more remarkable specimens from the museum were displayed Some of the more valuable of the treasures of the College were to be seen in the Common Room We hope that even if it be found impracticable to hold a Fellows dinner annually it may be possible to arrange for one in alternate years The day of *election of members of the Council is very convenient for* several reasons and if all the arrangements are as perfect on subsequent occasions as they were this year there can be no cause for complaint This year for the first time no meeting of Fellows was summoned for, as will be remembered the persistent abstention of Fellows from these meetings prevented the formation of a quorum

CURIOUS RESULT OF LAXITY IN DEATH CERTIFICATION

IN the Philippines recently four criminals are stated to have been executed by the process known as garrotting and to have been certified as dead by a native medical man by *an American judge and by the other lay officials charged* with that duty Afterwards while the supposed dead bodies were lying in a church awaiting the funeral ceremony two of them showed signs of life and have since completely recovered to find that the record in their case has been closed and that they have no legal existence They are however, in spite of this retained in prison and it is suggested that if let loose they might commit further crimes although should they do so aggrieved persons killing them could not be punished for taking lives already officially extinct Their sentence has been changed to one of incarceration for life but the legality of this they dispute presumably on the ground *that the punishment ordered* in the first instance has been carried into execution If the story is true it might be suggested that as a precaution for the future the duty of death certification should be intrusted to one competent to perform it The qualifications of the medical man described in the account before us as a "native doctor are not stated

SUNSHINE RECORDS

IT is interesting to consider which property of sunshine is more important to life that of the heat-giving rays *or that of the chemically active rays* Both are, *of course* essential and although a person may be shivering in sunlight he may still be enjoying the benefit of the actinic emanations They are the agencies whereby the great synthetic processes in plant life are begun and continued They keep the machinery of nature in motion *and in being, they build up* food both for man and beast and if the chemical energies of sunlight were to cease life would flicker out Our knowledge of the chemical action of sunlight is, however, by *no means* complete In some way or other the advent of sunlight *increases* the *feeling of well* being of the individual possibly by promoting the oxidation processes of the internal economy The circulation is improved and the condition of the blood is favourably affected by its oxygen carrier being stimulated into activity Vitality, in a word, is increased and the exhilarating effect of the first burst of sunshine in the spring after a dull period in the winter is a common experience After all it is probable that "the brighter view of things" which individuals take under the influence of bright weather may have its origin in the chemical activities of the sun The health giving effects of sunshine may therefore be ascribed to the actinic rays rather than to the luminous rays of the sun The official records of sunshine in this country refer to the duration and not to the intensity, of the light In other words these returns record negatively the obscuration of the sun by cloud On the other hand, the temperature is *recorded in terms of intensity and it seems to* us that similarly the intensity or chemical activity of sun light should be recorded, for duration can bear no direct relationship to intensity. The sun might shine all day with a feeble intensity owing to meteorological conditions, haze *or fog and* conversely sunshine might only favour us *for an* hour and in that comparatively short time exhibit an intensity or degree of chemical activity equal to a day s duration The sunshine in mountainous places as in Switzerland is much more active chemically, as a rule, than the sunshine in the United Kingdom although in the latter place the duration might even exceed that of the former Amateur photographers experience this readily enough for they find that the exposure required for the sensitised plates on a bright day in Switzerland is infinitely less than that required under similar conditions in England In the former case the transparency of the air is greater and the actinic rays of the sun are not cut off as they are in this country Duration therefore is not necessarily a synonym for intensity and thus the value of comparative records of duration for different places may be discounted when any record of intensity is omitted No one would think of recording rainfall by its duration The actual amount of water falling would depend upon whether the shower was heavy or light or a steady drizzle The rainfall is therefore measured by the weight falling on a given area and it seems to us that the meteorological records should include not only the duration of sunshine but also its intensity as measured by its chemical effects If the *benefit derived from sunshine is due to its chemical energies* careful records should be kept of them especially at our health stations

NERVES OF THE SCLERA

THE nerves of the sclera have been investigated by the Russian physician Dr A Agagabow and the results which he has obtained are contained in the March number of the *Archiv fur Mikroskopische Anatomie* He finds that the best method to display them is the injection *in vivo* of methyl blue solution containing from 1 to 3 per cent with subsequent removal of the eye from the body, evisceration of its contents and careful section By these means the nerve endings can be followed to their finest ramifications and Dr Agagabow has been able to distinguish sensory, trophic and vaso motor nerves the last characterised by ganglion cells The sensory nerves are to be found in all parts of the sclerotic they are immediately recognised by being medullated though some lose their medullated sheath near *their termination* These fibres are varicose and exceedingly delicate and end in a nodule slightly larger than the varicosities In some instances a terminal brush like arrangement of varicose fibres is observable Where the nerve trunks cross vessels they may be sometimes seen to be *flattened out* and appear to be as much as two and a half times thicker than before or after crossing This peculiarity, which may be observed in other parts of the body, has not received the attention that it deserves from histologists

Dr. Agagabow gives illustrations showing the mode of termination of the sensory nerves. These are drawn with much delicacy. The vaso-motor nerves taken from the choroid are also shown which exhibit the disposition of the ganglion cells both singly and in groups. He states finally that in many sections of the sclera taken from white cats and rabbits finely granular nerve fibres may be met with which proceed from medullated nerve trunks and which form intercommunicating networks round endothelial cells.

PUBLIC-HOUSES AND THE SPREAD OF TUBERCULOSIS.

THAT the public-house is a fruitful source of infection by the tubercle bacillus is well known and the returns of the English Registrar-General show that public-house servants are specially prone to be affected by pulmonary tuberculosis. This is not to be wondered at when we consider that the floor of the lower class of public-house is covered with sawdust which in great measure is impregnated with sputum. This dust dries and is constantly being stirred up by the feet of drinkers. Not only are barmen and barmaids and the customers of the house thus exposed to infection but the unhappy children who are brought into the house by their mothers are likewise in danger. The public-house is the poor woman's club where she can discuss with her neighbours social and domestic incidents; the children cannot be left at home and so they sit on the public-house floor during their mothers' gossip-time. Only the other day passing a large public-house in one of the main thoroughfares of St. Luke's we noticed through the open door of a public bar several slatternly women drinking at the counter, while crawling on the floor of the bar and rubbing their hands in the saw-dust with which it was strewn were two babies of from 18 to 24 months old. That this is not an uncommon occurrence those who have occasion to visit poor and squalid neighbourhoods well know and in the light of such facts is it to be wondered that the race is said to be degenerating or that medical science should have such a hard up-hill fight with disease? Granting that these children, probably the offspring of degenerate beings, become infected with the bacillus of tubercle the environment in which they live will necessarily be a potent factor in the development of pulmonary tuberculosis and not only will they themselves suffer but they will also involve the public in great expense for their subsequent treatment and keep. Recently a law has been passed to prevent children under a certain age from obtaining intoxicants and there is legislation for the prevention of cruelty to children but as yet there is no law to prevent ignorant mothers from leaving their offspring to play on the disease-laden floor of a public-house. In another column we refer to the efforts being made to inculcate the precepts of hygiene at an early age, and many publicans, notably those in the borough of Woolwich, post up notices requesting their customers not to spit. But until spitting on the floor of a tavern is made a penal offence as it is at present to spit in a tramcar, there is but little hope of amelioration.

ON PUBLIC HEALTH AND SOME OTHER MATTERS.

THE Buddhist ascribes all evil to Avidyâ or ignorance, and whether the arguments by which he arrives at this conclusion be valid or not there can be no doubt that a large amount of bodily sickness, with its attendant pain and suffering, is due to this cause. To dispel the ignorance which creates disease is part of the work of the medical profession and in so doing it offers itself as a sacrifice to the cause which it serves. For does not its material existence depend upon the existence of the ills which it alleviates? Its reward is the satisfaction of duty well done, and more and more as our science continues in its progress is it seen that the work of medicine is becoming preventive. Our best energies are devoted to the forestalling of disease, instead of waiting, as in days gone by we were compelled to wait, until a manifested disease called for our therapeutics. In recent years, as thought and study have been devoted to the various aspects of public health, it has become obvious that endeavours to educate the masses of the people in those matters on which the general health depends offer the best chance of securing effective protection of the community. Medical men have consequently welcomed the aid of various institutions and societies which by collecting statistics, delivering lectures, and other methods have helped to awaken the members of the public to their responsibilities with regard to the care of family, community, and national health. Singularly little assistance in this direction has been received from the public press, the most powerful educative machine that we possess in other directions. So far from helping the cause of health, in too many cases the public press serves as a medium for puffing the quack. And even where the self-respect of editors and proprietors prevents this we are very generally treated to a curious exhibition of ignorance upon all medical topics. On the slightest hint of a new medical discovery inaccurate and highly coloured articles are written, holding out hopes to poor sufferers from diseases incurable—in the present state of our knowledge. If the press would become the vehicle of the dissemination of scientific knowledge instead of the medium by which the quack robs the public we should all have reason to rejoice. In the household ignorance of sanitary laws is often the cause of much disease otherwise preventable and in the case of infectious diseases the evil may be widespread. The want of knowledge of the most simple hygienic rules regarding food, ventilation, and cleanliness by the public as a body is astonishing. We are pleased therefore to see that a new movement is about to be initiated by the committee of management of the Hospital Saturday Fund, which has under its consideration a scheme for the establishment of a health department. It is proposed to form classes for the instruction of women in the elements of domestic hygiene, the lecturers to be medical men. The Hospital Saturday Fund is in touch with working men throughout London and the scheme if properly carried out ought, in the near future, to have an important influence on the health of the community generally.

INSANITY AND THE HEREDITARY NEUROSES ALLIED TO IT REGARDED FROM THE STANDPOINT OF VARIATION.

EVER since Morel of Belgium (1858) published his classical treatise on degeneration in human races the attention of alienists and neurologists has been drawn to the study of insanity as a problem of what the biologists call *variation*. In the *Edinburgh Medical Journal*, for May and June Dr. John Macpherson, Commissioner of Lunacy for Scotland, draws attention to the anatomical "stigmata" or physical signs of abnormal development present in the insane, and especially in the idiot, the imbecile, and the feeble-minded. The absence of certain mental faculties is, says Dr. Macpherson, "wholly or in part correlated with the development of the physical organisation, especially that of the central nervous system, and it is rare to meet with imperfect congenital structure of the nervous system in the absence of bodily imperfections." The more grave the incidence of the mental defect the more numerous and pronounced are the physical malformations. Thus, as we pass up the scale from monsters to idiots, imbeciles, and the higher classes of the latter we find a gradual diminution of physical stigmata of degeneration until they disappear altogether as we emerge upon the normal platform of the race. The mental defects which are correlated to these physical stigmata are manifested as epilepsy, hysteria, chorea, tics, and obsessions. An analysis of the causes acting on the germ cell or embryo so as to give rise to the defects or anomalies of idiocy, imbecility, and weakmindedness leads Dr. Macpherson to the conclusion that the vast majority (90 per cent.) of instances are due to modifications of the germ cell or the early embryo; in short, modifications of the germ plasma, so that the offspring born are in turn liable to transmit the defect or diathesis to their descendants. 10 per cent. of the cases are secondary to extraneous causes affecting the fœtus or newly born infant, such as difficult parturition and asphyxia, cerebral hæmorrhage, sensory defects from porencephaly and softening, and similar gross lesions. Dwarfism, says Dr. Macpherson, is often marked by physical (rachitic) deformity combined with a feeble intelligence, a point to which attention was called in THE LANCET[1] in an annotation on the relation of rickets to mental deficiency. Dwarfs are met with in every race and in most orders of plants and animals but, adds Dr. Macpherson, being pathological they are sterile and cannot procreate offspring. Absence of one or more fingers is correlated with acephalus, cynocephalus, or other grave malformation. "It is rare to see a diminution of fingers," says Geoffrey St. Hilaire, "in a non-monstrous individual." Polydactylism is, on the other hand, consistent with normal bodily and mental development and when it occurs in parents it is transmitted to the descendants with remarkable persistency. Dr. Macpherson quotes a classical case of the transmission of this defect for ten generations in a family, the transmission being effected by the female members only. Albinism, a condition of absence of the normal pigments of the skin, hair, and iris, is also "strongly inherited" (Lucas and Darwin), the formation of pigment being arrested early in fœtal life. A curious correlation of albinism with deafness is found in cats since albino cats with blue eyes (Darwin) are also born deaf. Dr. Felkin of Uganda states that idiocy is of frequent occurrence in albino children born of the natives. Germ cells or incipient embryos which are highly damaged or defective usually do not grow to full term but abort at the end of the first month of intra-uterine life, hence the relative fewness of full-born monstrosities. "But for this fact of abortion," adds Dr. Macpherson, "the relative number of human monsters [born at full term] would be infinitely greater than it is." Among the specific neuroses allied to insanity and which, like the latter, are transmissible by heredity are enumerated the following: epilepsy (which is ubiquitous in the human races), hysteria major (which is equally widespread), catalepsy, the phrensies occurring in spiritualistic "mediums" and "oracles," and dipsomania (a strongly marked craving for artificial mental states produced by alcohol and drugs, strongly hereditary, and usually commencing at the adolescent period of life). Many other bonds of similarity exist between dipsomaniacs and the insane, showing, concludes Dr. Macpherson, that the victims of dipsomania are variations from the normal type.

CONTAGIOUS ABORTION IN CATTLE.

THE contagious, specific, or infectious abortion of cattle has long been a source of great monetary loss to all breeders of such animals. At the request of the Board of Agriculture Professor Cave, F.R.C.V.S., has carried out a series of observations on its prevention the results of which have been issued in a leaflet published by the Board. This form of abortion, which may be defined as an infectious catarrh of the womb due to a specific organism and readily transmitted from one animal to another, produces in some herds a very large number of abortions every year, and once it has been introduced is very difficult to stamp out. The percentage of cows that may abort in a herd affected by this disease often amounts to as much as 50 per cent. of the whole number. If we estimate the monetary loss at, say, £7 10s. in each case it is clear that the total loss experienced by dairy farmers throughout the country is very large. The treatment adopted by Professor Cave consisted either in the internal administration of carbolic acid and the local application of various antiseptic lotions or in the use of local antiseptic applications alone. The internal administration of carbolic acid alone was also tried but with little result. When, however, reliance was placed on the external use of antiseptics the results obtained were most encouraging. In the case of a herd in which the loss from infectious abortion had amounted to from 25 to 50 per cent. of the calves during the last 18 years the following treatment was adopted. The anus, vulva, under surface of the tail, thighs, and udder were sprayed with a watery solution of izal (1 in 80) three times weekly. The cowsheds were cleansed by the use of lime-wash and common carbolic acid, while the under surface of the roofs was sprayed with izal solution (1 in 200). The lime-washing and the spraying of the roofs were done every three months and the floors and drains were washed with a solution of izal of the same strength three times a week. All cows which had aborted were carefully isolated, fattened, and sold. The experiment was carried out for a period of three years. During the first year four cases of abortion occurred and two cases of premature delivery. Two of the cases of abortion were in heifers which had not received any treatment at all. The outbreak, which was one of many years' duration, ceased entirely after eight months of treatment. In another case this method of local antiseptic treatment was combined with the internal administration of carbolic acid. Here almost equally good results were obtained, no doubt mainly due to the local treatment and not to the administration of the carbolic acid. Professor Cave's results clearly show that contagious abortion can be prevented by the adoption of appropriate local antiseptic treatment for the cows and if necessary for the bull and that it should be combined with the strict isolation of all cows which have aborted and their subsequent sale and the destruction by burning of the fœtuses, placentæ, and membranes. The experiments are of great interest to medical men as showing how successfully antiseptic treatment can be employed in veterinary obstetric medicine and are of the utmost importance to breeders of cattle who now know what precautions they should take when their herds become affected with this dangerous but preventable disease.

TREATMENT BY INTRASPINAL INJECTION OF DRUGS.

AT the meeting of the Académie de Médecine, Paris, held on June 14th Dr. Jules Glover read a paper of considerable practical interest on the intraspinal injection of various alkaloids as a means of treatment. He finds in severe conditions of renal inadequacy in the course of cases of heart disease with cardiac failure, in cases of severe diarrhœa with collapse, and in high-tension or low-tension conditions of the circulation that even after ordinary methods of treatment have failed the injection under antiseptic precautions of strong solutions of certain alkaloids gives satisfactory results. The alkaloids which have so far been tried are caffeine, pilocarpine, and atropine—that is, drugs with a powerful direct and general action on the central nervous system and the functions which it controls. In order to avoid too rapid spread of the drug to the higher centres it is important to give it in a solution isotonic with the cerebro-spinal fluid, and for this purpose it is necessary to carry out cryoscopic experiments to determine the osmotic pressure of the solutions. In experiments on rabbits it was found that solutions of these three alkaloids in small doses produced the usual effects of these drugs with a much greater rapidity and intensity and with more permanent results than when given by any other channel. In a case of cardiac failure and renal incompetence with general œdema, ascites, and uræmic symptoms in man, the intra-arachnoid injection of a solution of 0·25 centigramme of caffeine per cubic centimetre (*0·25 centi-cube*), followed on two occasions at intervals of three days by injections of 0·40 centi-cube, re-established the renal functions, raised the blood pressure, and facilitated the action of ordinary methods of treatment which had previously failed. It is needless to insist on the importance of rigid aseptic precautions in applying this method of treatment. The solutions should be from one-third to one-half or even as much as a cubic centimetre in volume, they should be neutral or slightly alkaline in reaction, and must be freshly prepared. Acid solutions of alkaloids, particularly quinine solutions, produce in animals immediate death. These observations by Dr. Glover, admittedly incomplete though they are, are yet of great interest as indicating a method of introducing drugs as a last resort in cases where their administration by ordinary channels is ineffective or impracticable. Lumbar puncture is now well known to be a comparatively simple process and often of great value as a diagnostic or therapeutic means. The administration of drugs in this manner should therefore also be a matter of very little difficulty. Although the method is not entirely new, since the intraspinal injection of cocaine has been extensively tried abroad, its application to the treatment of general conditions is an advance. Apparently, from Dr. Glover's account, if the precautions which he advises are adopted the method is harmless; at the same time it is obvious that if acid solutions like those of quinine have serious results the utmost care will have to be exercised in the use of this method.

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[1] THE LANCET, Jan. 10th, 1903, p. 117.

THE SCOTTISH POOR-LAW MEDICAL SERVICE.

IN THE LANCET of Jan. 9th we referred to the case of Dr. J. F. D. Macara, the Poor-law medical officer of Durness in Sutherlandshire. Dr. Macara had been threatened with dismissal by his parish council in the high-handed manner which is legal in Scotland. Dr. Macara, however, found means of commencing an action against the council and an injunction was obtained restraining the council from appointing anyone in Dr. Macara's stead. The parties eventually came to an agreement on the subjoined terms :—

1. The council to rescind their minutes of Nov. 6th and 20th, 1903; to withdraw the threatened dismissal of Dr. Macara and to reinstate him in his office. Although the council cannot legally enter into any binding contract in regard to the future duration of Dr. Macara's tenure of office it is honourably understood between all parties concerned that the [illegible] re Dr. Macara's dismissal in consequence [illegible] transpired, and that the settlement now [illegible] to end all ill-feeling between the parties. [illegible] all charges made against Dr. Macara, and [illegible] "breach of duty" against him in respect of the dictated certificate regarding Barbara Macpherson, and to acknowledge Dr. Macara's *bona fides* in all his actings throughout the present dispute.

3. Dr. Macara to render quarterly an account for medicines and medic[illegible] supplied by him to paupers and the same [illegible] council.

4. The [illegible] communicated to the *Scotsman* and *Glasgow Herald* newspapers and the local press, and to THE LANCET and *British Medical Journal*.

5. The council to pay the account of expenses incurred to Messrs. Inglis Orr and Bruce, W.S., in connexion with these actions as between agent and client, or in the option of the said Inglis Orr and Bruce the sum of £100 in full of all their said expenses.

6. The foregoing terms of settlement to be minuted verbatim in the minute-book of the council and to be given legal effect to by formal resolutions of the council. The minute-book containing said minutes and resolutions engrossed therein to be exhibited to Dr. Macara, who may make copies or extracts therefrom.

7. On the foregoing terms being implemented both parties will consent to the action of suspension and interdict and the action of reduction being dismissed by joint minute, and Dr. Macara will consent to waive his claim to damages against the council in respect of his attempted dismissal.

We congratulate Dr. Macara upon the result of his action, for to him, perhaps, more than to anyone else is due the fact that the grievances of the Scottish Poor-law medical service have become so widely known. But there can be no safety for Scottish Poor-law medical officers until their dismissal has to be approved by the Local Government Board in the same manner in which it now has to be approved in England and in Ireland.

TRAUMATIC RUPTURE OF INTESTINE.

THE *American Journal of the Medical Sciences* for June contains an important paper by Dr. E. J. Senn on Traumatic Intestinal Rupture with special reference to Indirect Applied Force. The subject merits greater attention than it has received. The degree of external injury of the abdomen is no criterion of the gravity of the internal injury. A slight abdominal contusion may be followed by great damage of the underlying viscera, while a crush sufficient to fracture neighbouring bones may leave the viscera intact. Intestinal injuries may be due to direct or indirect force. In the former the force is applied through the abdominal wall against the exposed intestine; in the latter the force is applied to the buttocks or the lumbar region. The possibility of rupture of the intestine being produced in the latter manner is liable to be overlooked. After a careful search Dr. Senn could find recorded only two well-authenticated cases. Dr. J. F. Bottomly has reported a case in which a patient was struck in the back below the left scapula by an approaching wagon and on operation perforation of the first portion of the jejunum was found.[1] Dr. Westbrook has described a case in which a man was struck in the lumbar region by a wagon-pole and the necropsy revealed a rupture at the junction of the duodenum and jejunum sufficient to admit two fingers.[2] Dr. Senn now reports the following case which shows the possibility of slight force applied to the buttocks producing laceration of intestine. On July 17th, 1903, at 6 P.M. a married woman, aged 26 years, while hurrying slipped and fell on the right buttock. She had just taken a hearty supper. No serious symptoms were noticed and she retired to bed as usual. At midnight she awoke with severe abdominal pains and vomited. On the following day she was seen by her medical attendant who prescribed opiates and turpentine stupes. The pains increased and she rapidly grew worse. On the 19th Dr. Senn saw her in consultation. She had an anxious appearance and complained bitterly of abdominal pains. The temperature was 104·3° F. and the pulse was 140. There were diffuse abdominal tenderness and marked tympanitis, especially in the region of the appendix. But for the history of injury appendicitis would have been diagnosed instead of perforative peritonitis. On opening the abdomen cloudy fluid escaped but no gas. On separating filmy adhesions of the great omentum there was a gush of fluid loaded with flakes of fibrin. The small intestine was greatly distended, of a bluish-black colour, and covered with lymph. After long exploration a sudden escape of gas was noticed deep down in the pelvis. Fæces were found in the peritoneal cavity and a small perforation of the size of the little finger nail in the jejunum. The abdominal cavity was cleansed by dry sponging, the perforation was sutured to the abdominal wound, and drainage was provided. Enterostomy was performed in consequence of the collapsed state of the patient and the paralytic state of the intestine. The patient recovered with a fistula which required a second operation. The fact that the fall was not severe was borne out by the absence of soreness or bruising of the buttock. The state of the abdominal muscles at the time of an injury plays an important part in the result. A blow on a rigid abdomen loses considerable force, while a blow on a relaxed one is transmitted with full force to the underlying intestines. Sometimes the bowel is not ruptured but only contused. Cases are recorded in which after an injury the patient did well for days and even weeks and then symptoms of perforative peritonitis arose and the necropsy showed a perforation. Mr. Thomas Bryant has recorded two cases in which such perforation took place on the fifth and nineteenth days after the injury respectively.[3] The contusion no doubt led to necrosis of the intestine. Severe abdominal injuries first produce shock. The more serious symptoms soon pass away unless there is injury of the abdominal viscera or internal hæmorrhage. If there is intestinal rupture with fæcal extravasation the symptoms of shock merge into those of general perforative peritonitis. In cases of contusion or incomplete rupture of the intestine after the symptoms of shock subside there is some pyrexia in consequence of the local peritonitis but there is not much change in the pulse. Constipation or diarrhœa may be present and possibly blood-stained stools. There are slight abdominal pain and tenderness. Such cases usually follow a favourable course. On the other hand, in cases of immediate extravasation of the intestinal contents there is at once excruciating pain, the face is pale, the pupils are dilated, the respiration is superficial, the pulse is small, and the temperature is subnormal. Vomiting soon follows. The abdomen is first rigid; later it is distended. The prognosis of rupture of the intestine depends on early diagnosis and operation. Thus according to Siegel's statistics the mortality of cases operated on in the first four hours was 15·2 per cent.; within five to eight hours, 44·4 per cent.; within nine to 12 hours, 63 per cent.; and later, 70 per cent. In all cases of abdominal contusion the rule should be to give a guarded prognosis, to keep the patient under careful observation, and upon the least suspicion of rupture to operate.

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[1] Boston City Hospital Reports, 1902.

[2] Brooklyn Medical Journal, 1902, p. 417.

VACATION COURSES IN BACTERIOLOGY AND PATHOLOGY AT KING'S COLLEGE.

A COURSE in practical and clinical bacteriology will be held daily at King's College, London, from 10.30 A.M. to 1 P.M., *commencing on Wednesday, August 3rd, and ending* on Saturday, August 13th. The course will consist of lectures, demonstrations, and practical work; in the latter the members of the class will make for themselves *permanent preparations of the chief pathogenic micro*-organisms and will carry out the principal manipulations employed in bacteriological investigations. The fee will be £3 3*s*., inclusive of materials. Names should be sent in as soon as possible to the secretary or to Professor R. T. Hewlett. A course in clinical pathology will also be held on six afternoons from August 3rd to 13th from 2 to 4.30. The course will consist of demonstrations and practical work; the inclusive fee will be £2 2*s*. If both courses are taken the inclusive fee will be £4 4*s*.

OPERATION FOR PERFORATED GASTRIC ULCER.

THE mortality after operation for perforation of a gastric ulcer appears to be diminishing. Mikulicz was the first to operate for this condition in 1880 but it was not till 12 years later, in 1892, that we have any record of a successful case, when Kriege sutured a perforation and the patient recovered. At first the mortality of recorded cases was very high and in all probability the mortality of all cases treated by operation was still higher, for unsuccessful cases are never so readily recorded as the successful. Several factors have concurred in lowering the death-rate. Experience has taught us the best methods of operating and practice has enabled us to operate more quickly, but probably the chief factor in lessening the mortality is the fact that cases are operated on at an earlier period after perforation and as the length of the interval between the perforation and operation is the chief element in the prognosis we must look upon any reduction of this interval as a potent agent in reducing the death-rate. Practitioners are more ready in invoking the aid of the surgeon now that they are acquainted with the value of early surgical treatment and the public more readily submit to operation. It is not improbable that the mortality in hospital practice after operation for gastric perforation is less than in private practice, for in hospitals there is much less delay in preparing for an operation than is generally necessary when an operation has to be performed in a private house. In the present issue of THE LANCET are recorded the notes of nine consecutive cases of operation for perforated gastric ulcer at St. George's Hospital. Eight of these patients recovered and the only death occurred in a patient in whom perforation had probably taken place 48 hours previously and who had had to travel about 100 miles before operation. These results are excellent and reflect credit on the surgeons who performed the operations.

OPTICIANS AND SPECTACLE PRESCRIBING.

THE following report on Sight-testing by Spectacle Makers has been issued by the Ophthalmological Society over the signature of the President of the society, Mr. John Tweedy, F.R.C.S. Eng.:—

> [illegible] Kingdom, having had its
> [illegible] pful Company of Spectacle
> [illegible] ht-testing in the examina-
> [illegible] of efficiency therein, wishes
> [illegible] s which
> [illegible] work, it
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> [illegible] an only
> [illegible] ld only
> [illegible] minate
> [illegible] the eye
> [illegible] ble and dangerous
> [illegible] any organ of the
> [illegible] with its anatomy
> [illegible] ns to which it is
> liable.

This, of course, is the exact position which THE LANCET has always taken up. That the widespread need for reading spectacles in middle age can to a great extent be met by treatment based upon optical rules of thumb does not alter the fact that the eye is a living organ as well as an optical instrument. As a living organ it is subject to malformations and diseases which complicate, and are complicated by, its optical defects. It is impossible for anyone to deal with the latter who is not able also to appreciate the existence and influence of the former.

A TELEGRAM from Lord Milner, received at the Colonial Office on July 9th, states that for the week ending July 9th the plague return for the Transvaal was as follows: New cases 2—namely, 1 white and 1 coloured person—making the present total of suspected and proved cases 149—namely, 28 white and 121 coloured persons. There were no deaths during the week.—As regards Hong-Kong, a telegram from the Acting Governor, received at the Colonial Office on July 12th, states that for the week ending July 9th there were 24 cases of plague and 21 deaths from the disease.

DEFECTIVE SIGHT IN SCHOOL CHILDREN.—At the meeting of the Plymouth education committee held on July 4th it was decided to engage the services of an ophthalmic surgeon at a salary of £40 per annum for the examination of cases of defective sight in the elementary schools of the borough.

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[3] THE LANCET, Dec. 7th, 1895, p. 1419.

THE IMPERIAL CANCER RESEARCH FUND.

THE third meeting of the general committee of the Cancer Research Fund was held at Marlborough House on July 8th. H.R.H. the Prince of Wales, the President, occupied the chair and amongst those present were Adeline Duchess of Bedford, Lord Strathcona, Sir William Broadbent, Sir William Church (President of the Royal College of Physicians of London), Sir Alfred Cooper, Sir Henry Howse, Sir Douglas Powell, Mr. Julius Wernher, Mr. John Tweedy (President of the Royal College of Surgeons of England), Mr. Henry T. Butlin, Mr. John Langton, Mr. R. Littlejohn, Professor J. McFadyean, Dr. P. H. Pye-Smith, Mr. S. Neumann, Professor G. Sims Woodhead, Mr. Henry Morris (honorary treasurer), Dr. E. F. Bashford (general superintendent and director of the Central Laboratory), and Mr. F. G. Hallett (secretary).

The SECRETARY having read the minutes of the last meeting, which were duly confirmed,

The PRINCE of WALES called upon Sir William Church to move the adoption of the report, an abstract of which follows.

ABSTRACT OF THE SECOND ANNUAL REPORT OF THE CANCER RESEARCH FUND.

Report of the Secretary.

The executive committee has met every month in this the second year of the existence of the Fund, except in August and September, and at each meeting the general superintendent, Dr. E. F. Bashford, submitted a report of the work in hand for the consideration of the committee. The work, which was always fully explained and discussed, is set forth in Dr. Bashford's report and shows the scope of the organisation for carrying out the original intention of the scheme, for extending the investigation to all parts of the world, for encouraging others by means of grants, for pursuing some definite lines of inquiry, and for guiding public opinion on matters relating to the subject, as well as the investigation of the constantly reported cancer "cures." At the meeting in July the appointment of an actuary was authorised for statistical purposes and the laboratory staff was increased to meet the demands of the research. The negotiations for the acquisition of a farm where animals suffering from cancer may be kept under observation for therapeutical and other purposes were brought to a successful conclusion in November and at the December meeting the lease was agreed to and possession was obtained. At this meeting it was also decided that any scientific publications relating to the work of the Cancer Research Fund shall be made officially in the name of the executive committee. The conditions under which grants from the Research Fund may be made to those who are working at problems bearing on cancer were determined at the meeting in March and are as follows: 1. Grants shall only be made to individual workers for definite work, the nature of which shall be stated at the time of application, and which shall receive the approval of the executive committee. 2. The results of work done by the aid of such grants shall be submitted to the executive committee. 3. The publication of such results, if sanctioned by the executive committee, shall be made in the scientific reports of the Cancer Research Fund or in such other manner as the executive committee may approve. 4. Any material supplied by the director or executive committee for investigation shall be considered the property of the Fund and any results of research in connexion therewith shall be acknowledged as having been done in connexion with the Cancer Research Fund. The first grant of £200 was made on the recommendation of the pathological subcommittee to Professor J. Brentland Farmer, F.R.S., of the Royal College of Science to enable him to continue his researches on the cytology of malignant and other growths. Dr. W. Cramer, Ph.D., was in April appointed assistant to Dr. Bashford to carry out special bio-chemical investigations.

Report of the General Superintendent.

Except those portions of the investigation which it has been necessary to conduct at the farm, the work has been carried out in the office and central laboratories placed at the disposal of the Cancer Research Fund by the Royal Colleges of Physicians and Surgeons. This accommodation has been fully occupied and has proved eminently suitable and convenient. The possession of a farm for accommodating the larger kinds of animals has been a necessity. Up to February this accommodation continued to be generously provided by a member of the executive committee. Since that date the farm secured by the executive committee has been adapted to the purposes of the investigations and a number of animals has been under constant observation there. The comparative biological and experimental line of inquiry has been proved to have the value which was predicted for it when starting the work of the Cancer Research Fund and to which attention was drawn a year ago. Facts have been thereby brought out which have a fundamental bearing on several of the crucial problems of cancer and give definite indication of the line for future inquiries. The discovery of a fertilisation process in transplanted tumours explains much that has hitherto been absolutely obscure. The investigations which have been made during the past year may be conveniently described under separate headings.

I. *Experimental work on the nature and processes of growth of cancer.*—[The work referred to under this heading has already appeared in THE LANCET.[1]]

II. *Experimental investigations bearing upon the diagnosis and treatment of cancer.*—An essential preliminary to the problems involved in attempting to modify the growth of cancerous tissue must be the possibility of producing at will by transplantation the disease in animals in order to provide an adequate supply of tumours. This has been accomplished in certain experiments which have been made and is being further tried in experiments in progress. By means of the experimental observations thus rendered possible, various procedures which may legitimately be conceived to modify the powers of growth of transplanted tumours, or to yield specific evidence of their presence, have been studied. Thus a serum has been obtained capable of acting upon the tumour cells in the test-tube. Attempts, however, to produce the same effects in actively growing tumours in living animals have yielded negative results. The artificial transplantation of malignant tumours has been utilised to seek for specific evidence of their presence in an otherwise normal animal. The only [illegible] transplantation is the de [illegible] oculation, unaccompanied by any constitutional disturbance of a specific nature. Subsequent microscopical examination is necessary to determine the nature of the lump. In the number of animals which have been studied while suffering from primary new growths no specific symptom of the presence of the latter has been observed, and the conclusion of necessity is drawn that cancer *quâ* cancer in man and animals is still without a specific symptomatology. This conclusion loses its apparent surprising features when the results of the examination of transplanted tumours and of primary tumours as regards their microscopical characters are borne in mind. As already stated, the cells introduced by transplantation themselves grow and produce the new tumours, and the latter present characters identical with those of the tissue in which the primary tumour arose and never cell-masses of heterogeneous type. Artificially transplanted tumours afford the most favourable circumstances for testing the claims made on behalf of various reputed empirical therapeutic methods. Of these the number brought to the notice of the Cancer Research Fund is very great. It has been necessary to examine in detail the action of radium bromide. Tumours of the mouse transplanted subcutaneously have been subjected to the action of radium bromide and in some cases the rate of growth has been diminished; in other cases it has ceased altogether and the tumour has practically disappeared. In other cases, again, no action has yet been observed. It has been necessary to determine in how far the susceptibilities to radium rays of the tumours and other tissues vary and for this purpose control experiments are being carried out. They are not yet concluded but there is no doubt that the action of radium is not limited to cells of the malignant tumours. Subcutaneous transplanted tumours of small size are peculiarly accessible to, and favourable for, the manifestation of the action of radium but afford no ground for predicting the curative effect of radium upon deep-seated primary tumours.

III. *Statistical* [illegible] method of tabulating malignant new gr[illegible] case of the hospital statistics given in the first annual report has been adopted by

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[1] THE LANCET, Feb. 13th. 1904, p. 413, et seq.

Dr J F W Latham in recording the mortality from cancer in England in the Sixty fourth Annual Report of the Registrar General for 1901 At the request of the statistical sub committee Dr Latham a year ago reported what steps could be taken to secure a fuller utilisation of the data on which the returns of the Registrar General are based At the time of drawing up the last annual report a special grant had been made by the executive committee for the employment of certain clerks in the General Register Office to abstract the facts from the registers setting forth particulars of the type of disease and organs affected with the object of ascertaining the relative incidence of fatal cancer on the more important occupations Dr Tatham has found it needful, however, to have this investigation made for the forthcoming census reports on a larger scale than was originally intended The investigation is still proceeding, and in the circumstances it has not been necessary for the Cancer Research Fund to defray the expenses

Hospital statistics —It has been possible to devise a plan whereby many of the London hospitals place at the disposal of the Cancer Research Fund succinct accounts of all the cases of cancer which have been subjected to microscopical examination The arrangements have been in working order for about nine months The practical result of the scheme is a card index recording all the important features of each case provided by the registrars of the different hospitals This admits of the ready analysis of the facts in various directions—e g , organ age, and sex incidence comparison of the clinical manifestations with the result of microscopical examination, influence of heredity, locality &c The total number of cards which have been received is 1913 The segregation of malignant new growths into those with characteristic manifestations and those without adopted in the first annual report has proved justifiable and instructive It has revealed the relatively frequent occurrence of conditions simulating malignant new growths and therefore explains many reputed cures of cancer

The ethnological distribution of cancer —It is too early to draw conclusions on the relative frequency of cancer in the various races of mankind from the facts which have accumulated on the incidence of cancer in various uncivilised native races of the empire It may be pointed out however that it is just where this evidence is most valuable that the various officials and private individuals who are engaged in searching for it meet with difficulties in their observations which only the most energetic efforts can overcome It is therefore interesting to know that specimens of cancer—carcinoma and sarcoma—have been obtained for the first time from certain native races inhabiting various tropical regions

The nature of the discrepancy in the recorded cancer death rate in Ireland and Great Britain —By persistent inquiry it has been possible to obtain from most of the hospitals and dispensaries in Ireland data regarding the total number of in patients and the total number of cases of cancer occurring among them The returns from general hospitals give a total of 110 646 in patients and of 3017 cases of cancer There is thus one case of cancer in every 36 patients The corre

the hospitals of the two countries In the course of the inquiry the fact has been ascertained that autopsies are performed with minimal frequency in Irish hospitals whereas in London hospitals they are responsible for adding largely

of the facts elicited on the diagnosis of cancer in London and Irish hospitals reveals the magnitude of the differences which may exist between the recorded frequency of cancer

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in Ireland The discrepancy between the recorded frequency of cancer in London and Irish hospitals can be explained solely by the heavy disadvantages under which the search for cancer is carried out in the latter The only conclusion possible is that among that proportion of the Irish population which does not have access to hospitals a still higher percentage of cases of cancer remains unrecorded, with the result that the relative frequency in hospital and the relative infrequency outside of hospitals together co cancer mortality throughout ability the more favourable ad if they existed in Ireland would quickly demonstrate there a cancer death rate proportionately higher than that of England in accordance with the higher age constitution of the Irish population

The bearing of the provisional results upon the reputed increase of cancer —The statistical and experimental investigations especially those relating to the transmissibility of cancer have a bearing upon the interpretations which others have put upon the increase in the recorded number of deaths from malignant new growths The results of the investigation into the difference in the recorded death rate from cancer in England as compared with Ireland has proved the absence in the latter country of various factors which are known to augment the number of deaths assigned to cancer in England , and the inference is justifiable that cancer is less frequently recorded in Ireland because the means for observing it are less adequate than in England Stated generally, the facts ascertained show a gradual diminution in the precision and completeness with which cancer is recorded among the inhabitants of England of Ireland, and of various outlying parts of the empire, till a minimum is reached in the case of the natives of certain tropical colonies A similar gradation is evident in the case of the domesticated and wild animals The extent to which cancer is recorded is inversely proportional to the difficulties which have to be overcome in obtaining information

Report of the Honorary Treasurer for the Year ending June 24th 1904

Twelve months ago the donations amounted to £49 686 9*s* 6*d* the interest and dividends derived therefrom gave £896 13*s* 6*d* and the total expenditure had been £997 2*s* 3*d* thus the working expenses had encroached upon the capital to the extent of £100 8*s* 9*d* During the past year donations have been added to the extent of £25 334 3*s* thus bringing up the total amount received to £75 020 12*s* 6*d* The interest on deposit account and dividends on invested stock have yielded during the year £1727 8*s* 5*d* whilst the total expenditure has reached the sum of £2987 10*s* 6*d* showing a still further encroachment upon capital of £1260 2*s* 1*d* It is impossible to refer to the donations received during the financial year now just concluded without particularising in terms of the deepest gratitude the munificence of Mr William Waldorf Astor who, in August last contributed the sum of £20,000

As the Cancer Research Fund has not had the advantage possessed by the Royal Commission on Tuberculosis—namely a complete farm placed at its disposal for the purpose of carrying on investigations for an indefinite time—its farm account will necessarily be an annual charge upon income The scientific staff already fully if not indeed, over worked cannot possibly be reduced but on the other hand in all probability will have to be increased as times goes on, whilst the acquisition of sufficient statistical material of a perfectly reliable character will demand a continuance for at

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It ought to be mentioned that all the laboratory and the

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rent and indeed without charge of any kind for fuel, lighting and other incidental expenses whilst the executive committee—members of which attend the monthly meetings with great regularity—give their services gratuitously One of the members of the executive committee, who desires that

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February last when the animals were able to be received upon the farm now rented by the Cancer Research Fund

Every effort is made by the executive committee to keep down expenses as far as is consistent with efficiency and the wide scope of research but in spite of the strictest economy the annual expenditure in the immediate future cannot be less than £3000. It is therefore very disappointing that the capital sum required to yield an income equal to the expenditure is still far short of the necessary amount. From the outset the promoters of the Cancer Research Fund realised that £100,000 is the lowest sum which would be sufficient to defray expenses if the capital was to be left untouched. It is, and has from the first been, a great object in view not to expend any part of the principal, so that in the event of the nature and cause of cancer being discovered the fund should be available for the utilisation and application of this new knowledge in preventing and curing the disease; or that it should be reserved for the purpose of expending the income in conducting other researches of similar importance. It is a notable and significant fact that up to the present time only 328 individuals and ten City guilds have contributed to the fund. The excellence and large amount of work already accomplished by the scientific staff is most encouraging for the future and affords good reason why, before another annual report has to be written, at least the minimum sum needed for the complete and continuous prosecution of the research ought to be subscribed.

Sir William Church then moved the adoption of the report, commencing by regretting the absence of the Prime Minister to whom this duty had been allotted. With regard to the statistical investigations of the Cancer Research Fund, which do not seem to point to an actual increase in the number of deaths due to cancer, he expressed himself as exceedingly anxious that the position should not be misunderstood by those present at that meeting or by the public. Cancer, he said, may or may not be on the increase, but, he pointed out, we are not in a position to give a definite answer to that question, for this reason—that the statistics of cancer are not trustworthy for purposes of comparison—that is to say, we cannot compare the rate of deaths attributed to cancer now with the rate of deaths attributed to cancer 30, 20, or 10 years ago, and continued as follows with special reference to the statistics of cancer at the London hospitals. Of the malignant growths taking place in some accessible positions 91 per cent. have characteristic manifestations whereas of those which are inaccessible—that is to say, where the growths cannot be seen or readily detected—there are only 60½ per cent. which have characteristic manifestations. If you take the whole of those three groups together you find that of them 89 per cent.—really you may say 90 per cent.—present characteristic manifestations. In other words, of the growths in accessible or in what are termed intermediate positions 90 per cent. odd have characteristic manifestations and are recognised as cancer, and 8 per cent., or very nearly 9 per cent., have no characteristic manifestations and consequently may escape observation; and of those in inaccessible positions very nearly 39½ per cent. have no characteric manifestations and may escape observation. Now these are not cases such as those collected by the Registrar-General—cases of deaths attributable to cancer or cases in which cancer is supposed to exist but they are all cases in which the presence of the disease has been verified by microscopical examination. So that, to sum it up very briefly, if you take the whole of those figures you find that of the malignant growths which are under observation in the London hospitals there are 22 per cent. which are not recognised. Now that is very striking, and I think we may safely conclude, considering the difficulty of obtaining accuracy in these statistics in the London hospitals where the patients are under the observation of most competent persons not only of those who treat them but also of students who are daily looking out for symptoms, that the error is greater in the statistics of the general population of the country. Sir William Church concluded his remarks on the prevalence of cancer by expressing a wish that it should not go out authoritatively that the Cancer Research Fund had said that cancer had diminished, because it had been admitted that there are no data at present by which we can form an opinion as to whether the alleged increase is real or not. He then alluded in some detail to the excellent biological work done by Dr. Bashford and Dr. Murray in connexion with cancer, and reference to the publication of which in The Lancet has already been made, and concluded by summarising the present position with regard to treatment and by alluding to the need for more money. Sir William Church made quite clear to his audience that as yet no curative methods are recognised as superseding surgical interference, especially saying of radium "that it has an effect upon cancer cells is undoubted but this is an effect which it also has on normal tissues. It cannot be in any way regarded at present as having shown any indication that it is in any way curative of the disease. Cancer cells appear to undergo absorption and diminution under its influence but so do also the normal cells and tissues."

Sir Henry Howse, in seconding the motion for the adoption of the report, referred to the possibility which has been shown in the course of the last year of transplanting cancer in animals of a similar species and so carrying it on. It is not only the fact that the transmissibility of cancer has been proved, he said, but this fact opens up a great possibility in the future to investigations which would otherwise be extremely difficult.

The motion was carried unanimously.

Mr. W. Waldorf Astor, who recently gave £20,000 to the fund, having been elected a Vice-President and Mr. Watson Cheyne having been re-elected a member of the executive committee,

Lord Strathcona then moved a vote of thanks to H.R.H. the Prince of Wales for presiding over the meeting, and pointed out that the countenance and support given to the work by His Royal Highness would have the best effect in inducing people not only in England but in all parts of the world, in India and in our colonies, to give their attention to a very important matter.

Mr. Tweedy having briefly seconded the motion, it was *carried with acclamation.*

The Prince of Wales then said: My Lord and Gentlemen,—In expressing my gratitude for the hearty way in which this vote of [illegible] posed and seconded by my noble friend [illegible] Mr. Tweedy, and received by those who have kindly supported me here to-day, I wish to say what pleasure it gives me, as President of the Cancer Research Fund, to be present at this the third meeting of the general committee. The report which has been circulated among you, apart from its technical details, contains information which cannot fail to be of much importance to the public generally, while we who are met here to day have listened with interest to the excellent speech which has been made by Sir William Church in moving its approval and adoption. I know you will join with me in congratulating the executive committee, the general superintendent, treasurer, and secretary on the satisfactory results of their labours during the past year. Without presuming to tread upon the ground of so essentially a technical character as that of the report, I may say that the progress which it records is of good augury, for I gather that the facts which have been ascertained showing how cancer cells propagate themselves may be of immense importance in obtaining a true knowledge of the disease. The investigations of the Cancer Research Fund have brought to light in an unexpected degree how universal the disease is. We now realise that it exists in all parts of the globe, in man and in animals, wild as well as domesticated. It has been said that this terrible scourge is the result of civilisation, but the research has obtained reliable evidence of cases, amongst others, in tribes in the Hinterland of our African protectorates, far removed from any influence of civilisation. Recognising how world-wide the disease is, the Research Fund has wisely extended its inquiries to the farthest limits of the Empire, as shown by Dr. Bashford's report. Those endeavours have been fully seconded by the authorities in India, of our colonies, of our various protectorates, and by the willing support of the Ministers at the head of these respective departments at home. I also wish to express my satisfaction at the hearty coöperation between the workers of the Research Fund and our friends in America and in the principal European countries. We owe much to the colonies. One of the principal donations to the fund came from the representative in this country of Canada. The Government of Hong-Kong has placed an annual sum of £30 on the estimates as a contribution to the fund. New Zealand sent us some of the first and most valuable material on the occurrence of cancer in fish. Considering the far-reaching interest in the subject and that our organisation to be successful must be extended throughout the empire, it was felt that further advantage to its labours might be secured if an addition to its title could be sanctioned, and I am glad to have this opportunity of stating that the King has approved of the fund being known for the future as the "Imperial Cancer Research Fund." There will also be a further advantage in this designation, that the work of the Research Fund will

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from their nature are more local in their scope and limited in their resources But the continued progress of the investigation makes ever increasing demands upon the fund, and the treasurer s report points out that up to the present only 328 individuals have contributed to the fund I am sure no words are required to plead the cause of this great national work, so important to the whole race of mankind There are few of us, unfortunately who have not had brought home to us the terrors of this fatal, mysterious disease, and does it not behove us, in the interests of humanity and science, to assist, to the utmost of our means, those who are giving much labour and valuable time to the organisation of research, as well as to those who consent to devote their whole lives in endeavouring to determine what so far has proved to be one of the insoluble problems of human life?

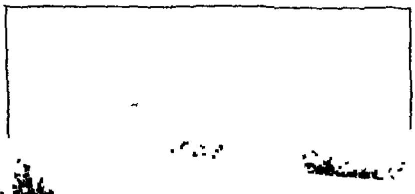
The proceedings then terminated

FRUIT AND FILTH.

(FROM A CORRESPONDENT)

To the uninitiated fruit picking calls up pleasant mental pictures of picturesque crowds of country people in sun bonnets and bright coloured aprons, with laughing eyes and brown faces, coming home laden with baskets of the rich, red strawberries or the even more brilliantly coloured red currants or other tempting fruit—all clean and sweet and wholesome As a matter of fact the true state of the case is very different, the greater part of the fruit that comes to London is picked and handled for market and made into jam by the very filthiest people in the whole community There are exceptions here and there, but I am well within the mark in saying that the greater proportion of the fruit grown in Kent is picked by people whom the readers of this article literally would prefer not to touch even with a pair of tongs Beginning at Orpington and the Crays and going south and east through the fruit-growing districts the observer will see at intervals of a mile or two long rows of iron shanties, each about 7 feet by 13 feet, which, did he not know, he would probably consider to be a particularly bad kind of pig sty and he would reflect and possibly write letters to the newspapers upon the great increase in pig keeping in Kent (Fig 1) He might also, if he were of an altruistic turn of mind comment upon the cruelty of keeping pigs during the hot weather in boxes made of corrugated iron In sober truth these are the dwellings of the people who pick the fruit or, to be strictly accurate, the greater part of it As soon as the strawberries commence to ripen the very lowest of the slum dwellers move out along the country roads into Kent and take up their abodes in the corrugated iron shanties ready for the fruit picking A few of the more aristocratic bring tents in which I have even seen a bed, whilst a still smaller proportion come in caravans The pickers, or, to give them their Kentish appellation, "pykers," who live in caravans, would amount to certainly not more than 1 per cent and the tent-dwellers might be reckoned in about the same proportion, the great majority live in the shanties They all belong to the floating, wastrel population who live by doing odd jobs and sometimes make pretty nearly enough during the summer at fruit-picking and hop picking to carry them through the winter season As soon as the soft fruit season is over they move farther down into the country to pick the hops The filthiness of the hop pickers is proverbial, but the fruit pickers are as filthy as any of the hop pickers, in fact, they form the lowest stratum, as many of the better-class hop pickers come down for the hop picking alone, regarding it as a yearly holiday

FIG. 1.



A view of the pickers shanties

On entering one of the little 13 feet by 7 feet dwellings, as well as you can on account of the crowd of urchins—bare footed, ragged and unwashed, with bright eyes *peeping* through matted hair and looking perhaps all the brighter from the long standing dirt on their faces—you will see probably one or two boxes turned up on end for seats and along one side bunks formed of strips of coarse canvas suspended one over the other as they are on board ship The people pack pretty closely and, including children and babies, there are generally six or eight human beings occupying one shanty My *wife tells* me that she has seen as many more people huddled up in one of these shanties in the winter, but they could hardly have all *slept* in one of them I may mention that my wife was obliged to discontinue her investigations on account of the fleas which she

every occasion, "not in single

A considerable number of the

wretched shanties all the year rou

at all events, getting a few odd jobs in the fields and at sorting potatoes, but living to some extent on the savings which they have made from the fruit season As may well be imagined, the sanitary arrangements are of the most elementary description, although as the people are living in the open air, usually removed at some distance from other dwellings, it may not be a matter of very great importance, but their general condition is indescribably wretched On my last visit to one of the Swanley "compounds" I watched a picker woman, having done her day s work in the strawberry fields, seated on a box and searching for lice in the tow coloured hair of a little girl who was kneeling in front of her This woman must have belonged to the aristocratic and cleanly section, for I am quite certain that the majority of them would not trouble themselves about such trifles as this

There are usually two pickings of strawberries and other soft fruit every day except Saturday and Sunday during the season the first as soon as there is sufficient light to see to pick the fruit commencing, say at 3 30 A M, and the second during the morning The first picking serves for the early trains which leave between 6 and 8 A M for the London market and the second picking for the London market to a certain extent and for the fruit trains which go to Manchester and the North For the first picking the "pykers" tumble out of their bunks—men, women, and children—and hasten to the adjoining fields They are provided with small chip baskets, which are emptied into larger baskets placed at the ends of the rows or in other convenient situations, and are paid at piece rates Most of the "pykers" have large families and they all help in the picking as soon as they are old enough to toddle In a good season a family will make quite good wages whilst it lasts, which is not for more than two months altogether, some families making as much as £2 per week As their expenses need amount to very little some of the more thrifty manage to put by (for them) a substantial sum When the larger measures are filled they are taken to a shed where the overseer gives tallies in exchange for them I have frequently stood by whilst this operation has been going on and if I have been on the leeward side the smell which has come from the crowd round the shed, in spite of the beautiful odour of the fruit has been horrible A few days ago I took shelter from a passing shower under a tree where a number of pickers had stood with their baskets about an hour previously and even after that *length of time the smell* was so evil that I preferred to move through the heavy rain to another tree some way off We hear a great deal about the filthiness of Poles and Russian Jews but I feel quite sure that it would be impossible for any people to be filthier than are those who pick the fruit in Kent (Fig. 2). Outbreaks of typhus fever, although not common, have occurred amongst them in recent years, and probably if it were possible to secure the statistics from the different districts some very alarming figures might be shown, although the life in the fresh air must do much to minimise the risk of epidemic disease. In picking the fruit the fingers of these people come into most intimate contact with the berries, and in the case of raspberries, which are of a very "squashy" description, the fruit must form almost a solution of the dirt on the fingers of the pickers. No country people in the fruit districts, however poor, would touch fruit which has been handled by the pickers and most careful inquiries are always made as to who has picked any fruit offered for sale. Yet a very large proportion of the fruit gathered by these filthy people must pass to the houses not only of the average respectable middle-class person but to the tables of "the rich and the great."

Swanley is perhaps the centre of the soft fruit district and a more wretched place it would be difficult to find. It consists essentially of one long street separated by two little streets from a large manure siding. There is no main drainage, the cesspool system being in use. As this is combined with a high-pressure water-supply the sanitary condition of Swanley during the fruit season may well be imagined. The extra pressure of population proves too much for the cesspools and I have frequently seen the liquid contents flowing down the gutters of the main street. The overcrowding, however, is not so bad as it was, for within the last year or two several rows of cottages have been erected on the outskirts. To get over the cesspool difficulty many of the cottage owners have driven deep holes into the chalk, which is only a few feet down, with the consequence that the sewage drains away through the chalk and the cesspools do not require to be emptied. The prospect of sewage finding its way into the Kent Company's water-supply which is drawn from the chalk is, to say the least, are a large number of these pickers the Swanley district and the photographs which are reproduced here have been taken near Swanley. The total number of corrugated iron shanties within two miles of Swanley station must amount to many hundreds and the fruit pickers in that neighbourhood are perhaps the filthiest in Kent; although I came across a large crowd near Orpington who would run them very close. The pickers at Hockenden, near St. Mary Cray, seemed of a slightly cleaner description, but there was not much to choose. In very few cases is the water laid on to the pickers' compounds and they have to fetch all they want in buckets, frequently from a distance, so that they have no temptation to be cleanly, even if they were so disposed. In the Wrotham district and near Tonbridge a large proportion of the picking is done by genuine country people and a very pretty appearance they present, but there is one farmer near Ightham who employs as wretched and filthy a set as can be seen anywhere. On the south-east side of Ightham also there are some very bad compounds.

It is interesting to trace the fruit from the fields on its way to the jam-pot. Not long ago I had the opportunity of going through a large London jam factory. As the fruit was delivered from railway wagons and the firm's own vans it was handed over to dirty old women to pick off the stalks and again went through a large amount of unsavoury handling. Then part of the fruit was made straight into jam by boiling it in steam jacketed pans with sugar. When the jam was sufficiently concentrated it was ladled into jars and allowed to cool in the usual way, whilst another portion was "pulped," that is to say, the fruit was partly boiled so as to sterilise it, and then packed away in large jars in the basement to be made into jam during the slack season. The soft fruit season is so short that some jam makers prefer to do this but the quality of the pulped jam cannot be nearly so good as that of the freshly made. Nevertheless, it enables a much larger quantity of jam to be made with the same plant and the factory goes on steadily until the marmalade season commences. The workers in this factory were certainly a little cleaner than the fruit pickers but were still of a very miserable, unwashed description. I feel sure that anyone who had seen the way in which fruit is handled would require a warranty from the jam maker that the fruit had been picked by cleanly people and made into jam by decent folk. As a contrast to this I may mention another visit to a jam factory in Cambridgeshire where the fruit was picked by the country folk and made into jam under the best conditions and I have no doubt that there are others equally as good.

FIG. 2.

A group of pickers.

I fear that it is very difficult to suggest a remedy for this very unsavoury state of affairs. It arises from the depopulation of the country districts and until through some alteration in our land system and other conditions the population is restored it seems to me that the farmers will be largely compelled to rely during the busy season of fruit-picking upon the wretched folk I have described. As I mentioned above, the overcrowding in the Swanley district has been remedied to some extent but in the Wrotham district matters seem to be going from bad to worse. As cottages become uninhabitable they are not replaced and a considerable number of cottages have been used by the local landowners for conversion into villas by the addition of another two or three rooms thus literally driving the peasantry out of the country." It would be difficult to animadvert too strongly upon the overcrowding which has been needlessly caused by the landlords round Ightham Whilst this goes on it is hopeless to expect any improvement in the conditions under which fruit is picked At the [illegible] t the farmers and land owners ([illegible] lutely callous about the matter ([illegible] the district and county councils the sanitary authorities apparently do not trouble themselves about the present state of affairs

HYGIENE AND TEMPERANCE FOR ELEMENTARY SCHOOLS

THE important petition signed by 14 718 registered medical practitioners in the United Kingdom addressed to the central education authorities asking that teaching on cleanliness, pure air, food, and drink should be included in the curricula of the public elementary schools and encouraged in the secondary schools was presented to Lord Londonderry, President of the Board of Education, at the offices [illegible] London, by a deputation of the [illegible] dical profession on July 11th [illegible] they are well aware that the laws of health may receive attention in the schools at the present time but that it is an optional subject They believe that it should be compulsory and that the instruction should be given at a much earlier age than at present The petitioners also urge the central education authorities to instruct the school children concerning the effects of alcohol on the body and the mind, and a strong point is also made of the necessity of insuring an adequate training of school teachers in regard to hygiene, temperance, and sanitation

The deputation was introduced to Lord Londonderry by Dr R Farquharson, M P, who is chairman of the Public Health Committee of the House of Commons The first speaker called upon was Sir William Broadbent, who has taken an active part in the movement and has done a great deal of work as chairman of the committee of distribution of the petition and who detailed the active efforts of the medical profession in furthering the development of early training in the principles of hygiene and temperance He was followed by Dr T D Griffiths President of the British Medical Association, who referred to the action of the Association and read a resolution passed by the council of the Association in January last strongly supporting the present movement as a practical measure against national physical deterioration and describing the general interest of the Association in the education of the people in hygiene and temperance Sir Thomas Barlow then made a short speech in which he urged the central authorities in education to adopt the proposed development of elementary education in hygiene and temperance and he then proceeded to explain what the far reaching effects of such teaching would be on the health and social prosperity of the nation The next speaker was Dr C F Hutchinson M P, who mentioned that it gave him great pleasure to support the deputation as he was one of the members of the Public Health Committee of the House of Commons He promised the medical profession that the movement would be helped in the House of Commons if medical men continued their efforts Professor G Sims Woodhead made a good point in the short speech which he delivered by emphasising the importance of the subject being taken up and directed in a thoroughly organised fashion by the central education authorities Sir Lauder Brunton discussed the matter from the wider standpoint of its international character and commented on the importance of cons [illegible] lrawn from the International [illegible] held at Nuremberg Dr M [illegible] ed of elementary teaching of hygiene, particularly in respect of the diet and feeding of infants and children, and remarked on the influence that such teaching would have on national hygiene and the spread of temperance Sir Victor Horsley was the last speaker on behalf of the deputation and he drew particular attention to the desire of the medical profession that the Government should institute elementary education in principles of health and temperance He declared that the necessity had been proved for such teaching being made universal and succeeded in showing very plainly how important it was to train the school teachers in the principles of hygiene, temperance, and sanitation

Lord Londonderry, in his reply, explained what the Board of Education had done and was intending to do towards carrying out the wishes of the deputation He was as anxious as Sir Victor Horsley was to have teachers giving instruction in the subject of hygiene but he was bound to say that at the present time those teachers did not exist It was impossible to believe that anyone would wish the children to be instructed in such important subjects by those who were not properly trained The Board of Education was however, devoting itself to the training of such teachers and he trusted that in the course of time its efforts in that direction would bring about the desired result The petition referred to the serious physical and moral conditions of degeneracy and disease resulting from the neglect and infraction of the elementary laws of hygiene, but he called their attention to the fact that a competent committee had for some time past been investigating the alleged effects of physical deterioration Until he was in possession of the opinions of that committee he felt that his hands were tied If when the committee reported they learnt that the evil suspected to exist was of a distinctly local character then he hoped that the action which the Board of Education had already taken in regard to instruction in the laws of health would prove to be sufficient to place the question everywhere on a proper basis in a short time Lord Londonderry concluded by quoting from the regulations and code issued by the Board of Education and asked the deputation to believe that the educational authorities were not ignoring the important questions raised by the petition He assured them that they fully realised their responsibility for contributing towards the production of a race that was strong in health and intellectually competent

MEDICINE AND THE LAW

Alleged Negligence in the Use of Cocaine

A VERDICT for the defendant has at last concluded an action brought against Mr Ebenezer Apperley a dentist practising at Stroud and in London which arose out of an operation performed in 1902 The plaintiff a carpenter, went to Mr Apperley's surgery on Christmas Eve suffering from toothache and the defendant's son also a dentist inserted a temporary stopping of cotton prepared with oil of cloves carbolic acid carbolised resin, and cocaine lanoline For this according to his evidence he used a 10 per cent solution of cocaine and he stated that he was sure that he did not put more than one twenty fifth of a grain of cocaine into the tooth The immediate effect upon the plaintiff according to his account of the matter was to make him dizzy so that he reeled like a drunken man On the following day when he was eating some pudding the temporary stopping came out and he swallowed it This according to his story, gave him ' another turn and he became so ill that a medical man was called in The plaintiff appears to have believed that the cotton wool was impregnated with cocaine only and in the course of the trial medical witnesses expressed the opinion that his symptoms were consistent with cocaine poisoning Medical witnesses for the defendant, besides the gentleman who put in the temporary stopping, negatived the alleged negligence, expressing the opinion that the temporary stopping had according to the plaintiff's own evidence, been properly inserted Attention was also called to symptoms among those described which were inconsistent with cocaine poisoning and to the absence of others which might have been expected The medical witnesses for the defendant considered that the sufferings of the plaintiff spoken of by himself and others and ascribed to Mr Apperley's alleged negligence were due to epilepsy or hysteria and this view was no doubt that of the jury The defendant is to be congratulated upon the result of the protracted litigation of which he has been the victim An action of such a description inflicts serious hardship upon a professional man who even if he is ultimately successful in defending his reputation can only do so at considerable expense and after enduring much anxiety The defendant in short, is at the mercy of the plaintiff for as long as the latter chooses to go on the former has no alternative but to resist the claim. To yield would be to admit a charge of professional incapacity and the contest is often with one who has everything to gain and little or nothing to lose by continuing it.

Nurses and Children.

The medical evidence given in a recent prosecution at the Marylebone police-court should be a warning to parents who intrust their children to the care of nurses that careful supervision is necessary in all cases, even when the usual testimony to good character has been obtained and the servant engaged appears to fulfil her duties satisfactorily. Ada Sprague, a girl, aged 19 years, summoned by her master for assaulting his son, aged three years, claimed to have had a gold watch given to her by her former employer and a ring by the prosecutor, and mentioned these somewhat unusual gifts to prove that she had not been altogether a bad nurse. Dr. J. Maughan, however, the divisional surgeon of police who had examined the child, deposed to bruises on his cheek, forehead, eyelid, and temple, to six bruises in the left groin, two in the region of the loin, and many others on the arms and other parts of the body. He had counted over 60 in all, independently of a mass of marks between the shoulders too numerous to be distinguishable, and he was able to say that though no individual injury was serious the effect of the thrashing which the child had received had been to produce a shock which prevented him from attending the court. The servant admitted that she had lost her temper with the little boy and alleged that he was dirty and stubborn. Mr. Plowden, the magistrate, referring to her statements mentioned above as to the esteem in which she has been held in her situations as nurse, said that the only surprise he felt was that she should be intrusted with the care of children at all and fined her 40*s*. with the alternative of a month's imprisonment. The father of the child is to be congratulated upon having secured this young woman's conviction and upon having laid before the bench clear and independent evidence in support of his charge. Not a few children suffer seriously in mind and body from the heedless unkindness or deliberate cruelty of their nurses. Those who observe the conduct of the women in charge of the children of the wealthier classes in such places of public resort as Hyde Park and Kensington Gardens cannot fail to notice at times instances of harsh treatment, such as to cause wonder whether the parents are aware of what goes on in their absence. In many cases they are not so aware and information given by the onlooker would be welcomed with gratitude; in others they are not only ignorant but indifferent; and in some the treatment meted out to the unfortunate little ones is actually connived at, or approved of, by persons who would resent as impertinent any report made to them or any remonstrance with their servant. The excuse made by the nurse that the child was "dirty" recalls a similar one put forward by Mrs. Penruddocke at the Old Bailey before her conviction for cruelty to her own child. It is not only temporary pain but actual injury to health that is inflicted upon children of tender years by chastisement when gentle and patient training and possibly medical advice are required.

Death Certification by an Unqualified Person.

At Winchester assizes a man charged as Charles Henry Hustwick alias Cormac has been convicted and sentenced to 18 months' hard labour for feloniously giving on the prescribed form issued to medical men a certificate of the death of a child. It was proved that the prisoner's name was not, and never had been, on the Medical Register, in spite of which he impudently asserted his innocence of the charge and boasted of having practised as a medical man for many years, having apparently at one time acted as an unqualified assistant to medical men. After the jury had given a verdict against him a previous conviction was proved for an attempt to procure abortion in Devonshire. It is to be hoped that the police will keep a watchful eye upon this person upon his release.

HEALTH OF ST. IVES.—The medical officer of health of St. Ives, Cornwall, in his annual report for 1903, states that the population of the town is 6697 and that 175 births were registered, giving a birth-rate of 26·13 per 1000; 95 deaths were registered, giving a death-rate of 14·18 per 1000.

Looking Back.

FROM

THE LANCET, *SATURDAY*, JULY 15, 1826.

HOSPITAL REPORTS.

ST. BARTHOLOMEW'S HOSPITAL.[1]

Dr. Latham, in reference to the above interesting case of hydrophobia, expressed in the presence of Mr. Abernethy, Mr. Vincent, and Mr. Stanley, and a numerous assemblage of pupils, an anxious wish for a post-mortem examination; observing at the same time his doubts of its practicability, as it was a notorious fact that the beadles were not only grossly deficient in their duty, but that it was against their interest to allow any examination whatever. Mr. Vincent mildly inquired of a beadle (a fellow of the name of Gates,) if there were any precise time for the corpses of patients to remain in the ward, where their influence must prove injurious to the unfortunate and distressed beings condemned to such a charnel-house; and if such regulation did exist, did it extend the time to five or six hours after death?

The beadle answered in a manner peculiarly his own, "*that in many instances they remain the whole of the day!* and as to any regulation he knew nothing about it."

Mr. Vincent expressed his disapprobation, and demanded a second time, to know if there was any such rule; remarking that it was disgraceful conduct, and very unfeeling to the poor friendless patients.

Mr. Stanley condescended to reason with the fellow, and thinking the argumentum ad hominem most fitted to his capacity, asked how he should like to be condemned to lie on a bed of suffering contiguous to a putrefying dead body for such a space of time? To this question the man of feeling (viz. the beadle) very properly and sensibly said that he would not like it at all. Dr. Latham desired to know, (as no rule had been laid down by the Governors of the hospital, and as it seemed to be left entirely to the humane discretion of the beadles,) the usual time they, in the exercise of that discretion, allowed to elapse before it pleased them to remove the putrefying mass, and whether he, the said Gates, considered himself fulfilling his duty to his employers, by allowing it to remain five or six hours, nay even the whole day, in the ward, during such African or dog-day weather as we now experience? The omnipotent beadle, being learned in the law, was aware that if he spoke the truth he would stand self-convicted, determined on being insolent, thereby avoiding a disagreeable answer to a question (in his opinion) *most uncalled for and unnecessary*. Screwing therefore his courage to the sticking place, he cooly informed the Doctor "that as the conversation commenced with Mr. Vincent, he did not *think fit* to answer *him*."

Dr. Latham turning to the pupils said, "You see Gentlemen, how these men domineer over the medical men; they do so to me every day. ...... It is a notorious fact, and the committee themselves know it, that every individual beadle in this hospital is an undertaker, and I ask, are undertakers fit men to fill the situation? Instead of doing their duty to the hospital, it is their interest to permit the friends of the deceased to take away the bodies. It would be both expense and trouble to the beadles to remove them to the dead-house; and by waiting for the relatives, and keeping the corpse in the ward, they stand a fair chance of becoming UNDERTAKER at the funeral. The committee shall be informed of this."

Mr. Stanley then expressed his wish to accompany Dr. Latham and Mr. Vincent to the committee; he said he had another cause of complaint against Gates to make known to the committee.

The fellow with an air of defiance and insolence, which he preserved throughout, told them he should be ready to answer them, and walked off.

Dr. L. addressing the pupils, said, "Gentlemen, as this is a most interesting case, and you will be most anxious to be present at the examination, I am sorry to say that it is out of my power to promise you any thing on that point, but I think I can name one way: '*Bribe* the beadle, Gentlemen, *bribe* the beadle.'"

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[1] Excerpts only have been transcribed.

VITAL STATISTICS

HEALTH OF ENGLISH TOWNS

IN 76 of the largest English towns 8567 births and 3948 deaths were registered during the week ending July 9th The annual rate of mortality in these towns which had been 13 8, 13 2 and 13 5 per 1000 in the three preceding weeks, was 13 5 per 1000 again last week In London the death rate was 12 9 per 1000 while it averaged 13 7 per 1000 in the 75 other large towns The lowest death rates in these towns were 2 6 in Handsworth (Staffs), 3 2 in Hornsey, 6 3 in King s Norton 6 9 in Tottenham, 7 1 in Leyton, 7 7 in Cardiff 8 4 in Walthamstow, and 8 5 in Coventry, while the highest rates were 17 7 in Gateshead, 17 9 in Manchester, 18 0 in South Shields 18 2 in Liverpool, 19 1 in Oldham 19 9 in Stockport 21 1 in Burton on Trent, and 21 4 in Huddersfield The 3948 deaths in these towns last week included 500 which were referred to the principal infectious diseases, against 487, 444, and 455 in the three preceding weeks, of these 500 deaths 182 resulted from measles, 115 from diarrhœa 109 from whooping cough, 40 from diphtheria, 32 from scarlet fever, 16 from ' fever ' (principally enteric), and six from small pox No death from any of these diseases was registered last week in Hornsey, Bournemouth, Devonport Handsworth (Staffs), Kings Norton, Wigan, Stockton on Tees, West Hartlepool, or Merthyr Tydfil, among the other towns the highest death rates from the principal infectious diseases were recorded
Liverpool, St Helens
Huddersfield The gr[illegible]
measles occurred in Walthamstow Plymouth Birkenhead Liverpool, St Helens Salford, Oldham, Burnley, and Huddersfield,, from scarlet fever in Aston Manor and York, *from diphtheria in Grimsby, from whooping* cough in Great Yarmouth, Burton on Trent, Birkenhead, Warrington, and Blackburn, and from diarrhœa in Southampton and Gateshead The mortality from 'fever ' showed no marked excess in any of the large towns Of the six fatal cases of small pox registered in these towns last week five belonged to Stockport and one to Gateshead The number of small pox patients under treatment in the Metropolitan Asylums Hospitals, which had been 80, 83, and 74 at the end of the three preceding weeks, had further declined to 71 at the end of last week, 10 new cases were admitted during the week, against seven, 16 and 10 in the three preceding weeks The number of scarlet fever cases in these hospitals and in the London Fever Hospital on Saturday last, July 9th was 1685 against 1630, 1629 and 1631 on the three preceding Saturdays, 269 new cases were admitted during the week, against 206, 199, and 254 in the three preceding weeks The deaths in London referred to pneumonia and diseases of the respiratory system which had been 142, 141, and 146 in the three preceding weeks declined again last week to 135 but were eight above the number in the corresponding period of last year The causes of 41 or 1 0 per cent of the deaths registered in the 76 towns last week were not certified either by a registered medical practitioner or by a coroner All the causes of death were duly certified in West Ham, Nottingham Salford Bradford, Newcastle on Tyne and in 51 other smaller towns, *while the largest proportions of uncertified deaths were* registered in Northampton Norwich, Birmingham Liverpool, Bolton, Sheffield, and Sunderland

HEALTH OF SCOTCH TOWNS

The annual rate of mortality in eight of the principal Scotch towns, which had been 17 0 15 9 and 16 3 per 1000 in the three preceding weeks declined again to 15 8 per 1000 during the week ending July 9th, and was 2 3 per 1000 in excess of the mean rate during the same period in the 76 large English towns The rates in the eight Scotch towns ranged from 12 3 in Perth and 13 0 in Aberdeen and in Leith, to 16 5 in Glasgow and 17 5 in Dundee The 524 deaths in these towns included 24 which were referred to whooping cough, 20 to diarrhœa, seven to ' fever ' six to measles, three to small pox two to scarlet fever, and two to diphtheria. In all, 64 deaths resulted from these principal infectious diseases last week, against 66, 74, and 75 in the three preceding weeks These 64 deaths were equal to an annual rate of 1 9 per 1000, which was 0 2 per 1000 above the mean rate last week from the same diseases in the 76 large English towns The fatal cases of whooping cough, which had been 21, 27 and 31 in the three preceding weeks, declined again last week to 24, of which 13 occurred in Glasgow, six in Edinburgh, and four in Aberdeen The deaths from diarrhœa, which had been 20, 22 and 18 in the three preceding weeks, rose again to 20 last week and included ten in Glasgow, three in Dundee *two in Edinburgh, and two in Aberdeen The fatal cases of* fever, which had been two, four, and three in the three preceding weeks increased again last week to seven of which four (including one from typhus) were registered in Glasgow, and two in Edinburgh The deaths from measles, which had been 12 and 14 in the two preceding weeks, declined again to six last week, and included two in Glasgow and two in Leith The fatal cases of small pox, which had been three one and two in the three preceding weeks rose again last week to three of which two were recorded in Glasgow and one in Edinburgh The deaths referred to diseases of the respiratory organs in these towns, which had been 93 64 and 80 in the three preceding weeks further rose last week to 88 but were slightly below the number in the corresponding period of last year The causes of 18 or more than 3 per cent, of the deaths registered in these eight towns last week were not certified

HEALTH OF DUBLIN

The death rate in Dublin which had been 21 7, 19 5, and 16 5 per 1000 in the three preceding weeks, rose again to 17 9 per 1000 during the week ending July 9th During the past four weeks the death rate has averaged 18 9 per 1000 the rates during the same period being 12 9 in London and 16 1 in Edinburgh The 130 deaths of persons belonging to Dublin registered during the week under *notice showed an excess of 10 over the number in the* preceding week and included 10 which were referred to the principal infectious diseases, against six, three and seven in the three preceding weeks, of these, five resulted from diarrhœa three from whooping cough, and two from measles, but not any from small pox, from scarlet fever, from diphtheria or from "fever' These ten deaths were equal to an annual rate of 1 4 per 1000 the death rates last week from the principal infectious diseases being 1 5 in London and 2 0 in Edinburgh The deaths from measles corresponded with the number in the preceding week while those from whooping cough and from diarrhœa showed an excess The 130 deaths in Dublin last week included 22 among children under one year of age and 33 among persons aged 60 years and upwards, the deaths both among infants and among elderly persons slightly exceeded the respective numbers in the preceding week One death from violence and three inquest cases were registered, and 45 or more than a third, of the deaths occurred in public institutions The causes of ten, or nearly 8 per cent, of the deaths in Dublin last week were not certified

THE SERVICES

ROYAL NAVY MEDICAL SERVICE

THE following appointments are notified —Fleet Surgeon O W Andrews to the *Magnificent* Surgeons F Cock to the *Magnificent* and A A Forrester to the *Pembroke* to be lent to Chatham Hospital

ROYAL ARMY MEDICAL CORPS

Major J W F Long retires on retired pay (dated July 9th, 1904) Captain E C Hayes and Captain I H M Clarke have been appointed to the Home District for duty in London

INDIAN MEDICAL SERVICE

The King has approved of the following promotions in and admissions to, the Indian Medical Service —Bengal to be Colonel Lieutenant Colonel David Wilkie (dated April 2nd 1904) Majors to be Lieutenant Colonels John Henry Tull Walsh Harold Hendley Hormasji Edulji Banatvala and William George Patrick Alpin (dated April 1st, 1904) To be Lieutenants Charles Hildred Brodribb (dated August 31st 1903) Punjab Hugh Basil Drake, Ernest Charles Hodgson William Sim McGillivray William Gillitt, William Frederick Brayne, Charles Harrison Barber, Hugh Watts, and William Tarr. Bombay: Merwan Sorab Irani, Ivor Davenport Jones, Walter Taylor Finlayson, Seymour Whitworth Jones, William Thomas McCowen, Hugh Ellis Stanger-Leathes, and John Anderson. Madras: Edmund Arthur Roberts, Geoffrey Gratrix Hirst, Michael Joseph Quirke, John Morgan Holmes, and Maurice Forbes White (dated Jan. 30th, 1904).

The King has also approved of the retirement from the service of the undermentioned officer: Lieutenant-Colonel John Campbell Fullerton (dated June 25th, 1904).

VOLUNTEER CORPS.

Royal Garrison Artillery (Volunteers): 1st Glamorganshire: Francis Griffith Thomas to be Surgeon-Lieutenant (dated July 9th, 1904). 8th Lancashire: Charles Edwin Maximilian Lowe to be Surgeon-Lieutenant (dated July 9th, 1904).

Rifle: 3rd Volunteer Battalion the Devonshire Regiment: Surgeon-Captain W. Langran resigns his commission (dated July 9th, 1904). 2nd (Berwickshire) Volunteer Battalion the King's Own Scottish Borderers: Surgeon-Captain S. Macvie to be Surgeon-Major (dated July 9th, 1904). 2nd Volunteer Battalion the Durham Light Infantry: Brigade Surgeon-Lieutenant-Colonel T. A. McCullagh resigns his commission and is granted the honorary rank of Surgeon-Colonel, with permission to wear the prescribed uniform, vacating at the same time the appointment of Senior Medical Officer to the Durham Light Infantry Volunteer Infantry Brigade (dated July 9th, 1904).

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).

The Woolwich Companies: Lieutenant J. Hardie to be Captain (dated July 9th, 1904). Welsh Bearer Company: Captain A. W. Sheen is appointed to command (dated July 9th, 1904).

THE SOUTH WALES BORDER VOLUNTEER INFANTRY BRIGADE.

The brigade camp will be held during July and August at Salisbury Plain and will consist of the following regiments—viz., the 1st, 2nd, 3rd, 4th, and 5th V.B. South Wales Borderers and the South Wales Border Volunteer Infantry Brigade Bearer Company. Surgeon-Captain R. J. Paton has been promoted to Surgeon-Major and Mr. D. J. Thomas has been appointed Surgeon-Lieutenant. Brigade Surgeon-Lieutenant-Colonel Philip E. Hill, V.D., is the senior medical officer of the brigade.

THE WAR IN THE FAR EAST.

It is very difficult to follow the progress of the war or to form anything like a correct estimate of the strength of the forces that have taken part in the latest military operations or of the losses sustained on either side; nor is it easy to locate at the present time their relative positions to one another in the field with a view to obtain some idea of their future strategical aims and movements. No decisive battle has yet been fought, but everything points to one being imminent, possibly at Tashi-chao or Newchwang. It seems certain, however, that the Japanese have taken and occupied Kaiping after some hard and protracted fighting, that the siege of Port Arthur is being actively carried on, and that there has been a good deal of almost continuous fighting in its vicinity, the fleet coöperating with the land forces. We have but little to do, however, with this aspect of the war, and from a purely medical point of view there has been next to nothing to record during the past week. The Japanese troops owing to their occupying for the most part mountain passes, rising ground, and the slopes of hills have obviously a better sanitary position in the rainy season than the Russians located on the rain-sodden and more or less water-logged plains, and it would be both interesting and instructive to have some statistical evidence of even an approximate kind about the relative sickness of the two armies. As regards the number of killed and wounded in the various recent engagements there is a wide disparity between the official estimates that have been published in the Russian and Japanese despatches. With regard to the Russian army we learn through Reuter's Agency that the *Official Messenger* has published the following telegram from Tashi-chao regarding the health of the Russian troops in the field: "Up to June 26th the number of officers and men in hospital amounted to 7·136 per cent. and 3·943 per cent. respectively of the total forces. If the wounded officers and men already removed to the rear are included the percentage is 10·24 and 6·51. After the beginning of the rainy season on July 9th the percentage of officers and men in the hospitals rose to 8·384 and 4·646 respectively, the proportion of patients suffering from infectious diseases increasing from 2·19 per cent. to 8·52 per cent., including a percentage of dysentery cases of 1·99." With a single line of railway and the amount of war material and food, as well as the number of reinforcements that have to be conveyed along it, we do not see how the Russians can carry out the system now adopted in warfare of transporting the sick and wounded from front to rear as soon as possible, and so far as Port Arthur is concerned the difficulty of providing them with medical relief and hospital accommodation must prove well-nigh insuperable. In this connexion we may mention the report of the senior medical officer of the *Mongolia* hospital ship at Port Arthur, who says that it is difficult to count on the complete recovery of the sick and wounded in Port Arthur unless they can be removed. The continuous tension is hard on them; every bombardment makes their condition worse, and the *Kotlin* suggests that the *Mongolia* should be allowed to take its invalids to Shanghai to tranship them for Russia.

The Liaoyang correspondent of the *Torgovo Promys-schlennaya Gazeta* sends the following description of the deplorable state of Inkau (the port of Newchwang). After describing the danger from the Chungtchuses, he says: "Not less dangerous for the town are the epidemic diseases which begin every year in the town and spread along the populous routes of Manchuria right through Transbaikalia to Irkutsk and Krasnoyarsk along the line of the Siberian railway. It may be said that Inkau has served as the home of plague and cholera that have raged in the Far East for a considerable period yearly, and probably the premier position as propagator of these diseases is reserved for that town for a long time to come. The sanitary condition of the town is fearful. Thousands of Chinese coolies live there in a state of extreme poverty and make use of food that has not had the slightest sanitary inspection. They inhabit houses that do not answer to the most rudimentary idea of hygiene. The deep river Liaoho which runs past the town is choked with refuse of all kinds which with the ebb and flow of the tide keeps moving in front of it. The river water is good neither for drinking nor washing by reason of its filth. Nevertheless, the Chinese who live on the junks make use of it. Besides this there is the large Chinese cemetery at a short distance from the town where the victims of previous epidemics are buried at such a little depth from the surface that wind blowing from that direction carries the effluvia of the corpses through the town. The principal European settlers in Inkau are English, Americans, and Germans and the Russians are the least in number."

THE JOURNAL OF THE ROYAL ARMY MEDICAL CORPS.

The July number of this publication, edited by Colonel David Bruce, F.R.S., R.A.M.C., contains many excellent papers and more than maintains its scientific and literary interest. Among the original communications the articles on Enteric Fever by Captain E. Blake Knox, R.A.M.C., and by Captain W. S. Harrison, R.A.M.C., are well worth reading. The former deals with the spread of enteric fever by urine and its prophylaxis and the latter with our present position with regard to enteric fever in India. Colonel Bruce contributes a paper on Sleeping Sickness in Uganda which is admirably illustrated and, as might have been expected from its source, is of high scientific value. The author deals with the subject in an ably reasoned and exhaustive way. The journal contains other papers of scientific, clinical, and general interest such as one on the Infectivity of Scarlet Fever by Lieutenant-Colonel R. H. Firth, R.A.M.C., and articles on the Medical Services of the Russian Army and on medical and surgical cases. But we must not omit to mention that under the heading of "Echoes from the Past" there appears Part I. of some charming notes written in fresh and simple style of Queen Victoria's visit to Fort Pitt and Chatham contributed by George Russell Dartnell, deputy inspector-general of hospitals, 1855-56.

THE NAVAL MEDICAL SUPPLEMENTAL FUND.

At the quarterly meeting of the directors of the Naval Medical Supplemental Fund held on July 12th with Sir James N. Dick, K.C.B., in the chair, the sum of £60 was distributed among the several applicants.

Correspondence.

"Audi alteram partem"

THE THORNE DEFENCE FUND

To the Editors of THE LANCET

SIRS,—May I express through the medium of THE LANCET my most grateful thanks for the chivalrous and practical sympathy which has been shown to me by colleagues and friends, known and unknown, in relieving me of the costs and damages awarded against me in the recent action in which I was the defendant? The sympathy has been most grateful to me and has very much helped me to bear the strain and anxiety inevitable in a case where one's professional character has been assailed I should also like to express my indebtedness to the Medical Defence Union and to Mr Hempson, the solicitor to the Union, for the care with which this case was conducted

I am, Sirs, yours faithfully,

Harley street W, July 12th 1904 MAX THORNE.

THE PRESENT CONDITIONS OF INFANT LIFE AND THEIR EFFECTS IN REGARD TO THE INFANT, CHILD, AND ADULT

To the Editors of THE LANCET

SIRS—It is a mere truism to say that we are entirely dependent on the infants of the present for the adult population of the future Yet while we do much to deal with disease in the child and adult we are almost totally neglecting to care for the human being at a period of life when exceptional care is most urgently needed About one fourth of the total deaths at all ages are contributed by infants under one year of age This mortality is extremely excessive It appears even more so *when we remember that all* the infants in the land are
so that those cared for in
and of the wealthy tend
homes of the poor Deal
Dr E W Hope medical officer of health of Liverpool wrote *in his report for the year 1901* —

> In the course of an inquiry into infantile mortality 1082 families in which the death of an infant had occurred were taken consecutively
> ine l The total
> n 4574 but out of
> ncy—representing
> markable series of
> the large total of
> rished in infancy
> These extreme examples occurred in families in which so far as municipal sanitation is concerned there was very little to choose between them and many of the families who rear all or nearly all their children

The mortality is bad enough but it must be doubted whether this is the worst result What of those who escape death? Do the survivors emerge uninjured by the conditions responsible for the death of so many of their fellows? Mr W Hall of Leeds has supplied one instance of the answer to this question Out of 2335 board *school* children examined by him he found that more than half were rickety But it is idle to select instances when the results are devastating the country It is scarcely credible that the present situation can continue when the medical profession and the public understand the issues involved *The study of* the infant and the conditions of infant life have been almost totally neglected and disease and deformity of every kind are the legacy of our neglect Year by year the demand for hospital accommodation increases and we persistently shut our eyes to the real and preventable cause of this demand *No matter whether we turn to hospitals for diseases of the* nervous system or to hospitals for diseases of the chest we see the results of infantile malnutrition In the wards and in the out patient departments of practically every general and special hospital we see the same thing The asylums, *prisons and workhouses are largely dependent for their* inmates upon the mental and physical deformities arising from defective structure

The predominating primary cause of these conditions is the improper feeding of the infant Maternal nursing is the ideal method and everything should be done to encourage this under proper conditions But this method is impracticable in a very large number of cases and consequently substitute feeding becomes a necessity The great reason for the present conditions is that the physiological factors involved have been almost completely neglected To obtain any real improvement it is essential that the traditional and domestic methods of artificial feeding should be entirely abandoned To discuss these methods in detail would be far beyond my present purpose Their failure is writ large in the present state of affairs Unfortunately the problem has been rendered more complicated by the well meant efforts of some of our municipalities to deal with the situation Stock mixtures put up in bottles and then sterilised may do a good deal *to diminish the mortality in the first year* But such a benefit may be dearly purchased The lessening of the mortality by such means must be followed by disease and deformity in the later years resulting from patent defects in the food mixtures supplied and the destruction of *important properties by the process of sterilisation*

Structural development in the young infant under normal conditions proceeds at a rate quite peculiar to this period of life The structure of nerve brain bone, and muscle depends entirely on the character of the food supplied during this period What is done then cannot be undone We cannot jerry build without suffering from the results

In the early part of 1903 the Infants Hospital was established in Denning road Hampstead The result of the work there has only been to convince me more and more of the vital importance to t
sent situation
site as soon as p
it is considered necessary that it shall be large enough to be organised on a proper basis and fitted with every arrangement for the saving of infant life and the furtherance of *scientific knowledge pertaining to this end For we need at* least one institution where the study of the many important problems involved can be systematically prosecuted This year the Infants Health Society has been established in the attempt to grapple with that great part of the problem not primarily belonging to the hospital—the prevention of disease and the securing for every infant food adequate in quantity and *quality* for his physiological needs I firmly believe that the present conditions of infant life most seriously threaten the welfare of the country And I am equally convinced that the remedy is comparatively easy if the importance of the issues is realised and due attention is given to the technical matters necessarily involved in providing a substitute for that most delicately constructed food—human milk

I am, Sirs, yours faithfully,

Harley street W July 9th 1904 RALPH VINCENT

ELECTRIC-LIGHT BATHS FOR HOSPITALS

To the Editors of THE LANCET

SIRS—I have been for some time contemplating the idea of making an urgent appeal to the authorities to introduce electric light baths into our hospitals for the use of both out patients and in patients We are in this matter far behind our German *confreres* as a visit last year to many hospitals in several German towns convinced me At these institutions for the treatment of poor people an electric light bath is a very usual part of the therapeutic outfit

Personal experience of this treatment in cases of rheu*matism myalgia* &c induces me to assert that recovery or improvement would take place much sooner under its employment than under the mere drug treatment of the present day Moreover the electric water bath is already in vogue at some of our hospitals, why should not the equally potent light bath be introduced? Surely in these days when the so called physical remedies are so largely employed our hospital patients should have the benefit of this particular mode of treatment and one which our private patients and the public generally are already using to such a large extent

I would also strongly advocate a trial at all events of the light baths in our fever hospitals for all cases when the rash is "suppressed" when we think of the power that this treatment possesses of filling the whole superficial area of the skin with blood surely it could not fail quickly to bring out the rash, in fact, under this treatment death from "suppressed scarlet fever," "suppressed small-pox," &c., should be things of the past. In the latter class of case, of course, the bath constructed for the reclining position would be the one chosen; the patient is as easily lifted on to this as on to a low couch, superficial suffusion would speedily ensue together with gentle perspiration, and the object in view would be rapidly attained.

Naturally, those of us who give this treatment can only take ordinary cases, therefore as regards results in fever cases I can but speak theoretically. The whole subject seems to me an important one and will, I trust, receive the attention of the profession generally.

I am, Sirs, yours faithfully,
J. STENSON HOOKER, M.D. Durh.

Gloucester-place, W., July 7th, 1904.

ACCIDENTAL REVACCINATION.

To the Editors of THE LANCET.

SIRS,—In reference to Mr. W. H. Bowen's case as reported in THE LANCET of July 2nd, p. 20, a patient sent a message for me stating that he was suffering from blood poisoning. My assistant saw him and prescribed, but as he became worse I called to see him and found a large vesicle on the under surface of the upper lip. He told me that some days earlier on arriving home from work he found that the public vaccinator had called and had put four spots on his child's arm. Being angry at the vaccination he sucked the spots. The child's arm "took" in spite of the heroic treatment, and the man was properly revaccinated.

I am, Sirs, yours faithfully,
Upper Pontnewydd, July 9th, 1904. ALFRED W. HAYLES.

MARGARINE FOR BUTTER.

To the Editors of THE LANCET.

SIRS,—It appears from your annotation in THE LANCET of June 25th that it is only recently that the fraudulent substitution of margarine for butter in "bread-and-butter" has been detected. On reference to the books of the late Camberwell vestry I find that there was a conviction for this offence first obtained by one of its sanitary inspectors in August, 1892, with others at intervals up to the present date; in each case fines varying from £2 to £1 were inflicted by the magistrate.—I am, Sirs, yours faithfully,

FRANCIS STEVENS,
Medical Officer of Health to the Borough of Camberwell.
July 6th, 1904.

SUPPRESSION OF URINE FOR NINE DAYS; OPERATION; RECOVERY.

To the Editors of THE LANCET.

SIRS,—The following case will be of general interest and should be placed on record. At 3 A.M. on March 21st last I was asked to see a patient, a stout woman, married, aged 48 years, who was suffering from acute pain in the abdomen. She had been uneasy on March 20th all the day but the excruciating pain, the most severe she had ever had, did not commence until after she had gone to bed and it then occurred in paroxysms. There was no abdominal swelling. During the previous five years she had had five attacks of similar, but less severe, pain and had passed in all five small calculi by the urethra. Three of these attacks of pain had taken place during the last six weeks. The only other illness she has ever had was a chill, accompanied by pain in her left groin, five years ago, which necessitated her remaining in bed for three weeks. With regard to her present condition, the pain in the abdomen being intense I gave her a subcutaneous injection of morphia at once and prescribed five grains of calomel to relieve her constipation.

As I was washing my hands previous to leaving I was informed, quite casually, that no urine had been passed since the previous Thursday, March 17th, at which I smiled from incredulity and said that probably some had passed when her bowels had acted, without her knowledge. But it instantly flashed across my mind, has she been suffering from acute retroversion of the uterus, with retention of urine, during the last six weeks which accounted for her three attacks of pain and not from ureteral calculus? I therefore renewed my examination, and, finding all normal in the pelvis, passed a catheter without drawing off one drop of urine. I visited her again on March 21st at 8.30 A.M., found her free from pain, and was shown the action of the bowels, resulting from the dose of calomel, which was entirely free from urine. I thereupon recommended her removal to the hospital for the purpose of investigation and possibly urgent operation.

I need not occupy your space with all the arguments and conjectures that arose on account of her anuria during the succeeding days, involving the questions of retention somewhere internally or suppression with the possibility of the supervention of uræmia. Physical examination from day to day revealed nc [illegible] rise of temperature. As she appeared in [illegible] was allowed ordinary diet, but with a restriction of fluid (she was satisfied with three ounces a day) on the theory that her urine must be accumulating internally and would have to be dealt with as soon as any indication arose. She was kept in bed and she had hot baths night and morning, which she could bear at 114° F., in the hope that they would facilitate the passage of a ureteral calculus; if, on the other hand, there was suppression of urine I hoped to afford relief by thus acting on the skin and on the bowels by salines. As she had previously passed successfully through similar, but slighter, attacks of pain, though without any interference with the urine, it was clear that we could only await the issue of events. Suffice it to say, that she was day by day carefully examined and critically watched and beyond the slight rise in temperature already referred to (morning 99°, evening occasionally 101°) there was no symptom of discomfort or ill-health of any sort or kind, not even a headache.

Now from Monday, March 21st, to Saturday, March 26th, not one drop of urine was passed, with or without catheter, although under the closest observation, and we have testimony which can be trusted, as I know the patient and her husband, that none was passed from 3.30 P.M. on March 17th until the close of the operation at 6.30 P.M. on March 26th, a period of 219 hours. On March 26th, when her evening temperature was taken at 5 P.M. it was noticed that she looked hot and flushed and the thermometer recorded 108°. I immediately received a telephone message of the fact and directed that both my colleagues, Dr. H. Simpson and Mr. W. A. E. Waller, should be summoned, whose advice and assistance I gratefully acknowledge, and at 5.30 P.M. she was placed under an anæsthetic. There being no indication as to the course to be pursued, after another examination while under the anæsthetic and the use of the catheter without result, I resolved to open the abdomen *and investigate inside.*

I made a four-inch incision through at least one and a half inches of subcutaneous fat in the abdominal wall, between the umbilicus and the pubes. I found the bladder empty; the ureters were normal in size; there was no distension of the pelvis of either kidney; both kidneys were slightly larger than normal as far as one could tell with the hand, and the right, apparently, was a little larger than the left. I then closed the abdominal wound; turned her well over on her left side; made an incision in the right lumbar region; and failing to feel a stone in the pelvis of the kidney incised the capsule over the convex border of the right kidney and cut through the structure of the kidney towards its pelvis. As, however, the hæmorrhage was rather free I resorted to both forefingers and very gently split the remainder until I reached the pelvis and thus saved much hæmorrhage. In the pelvis of the kidney I came upon about a drachm of rather strong-smelling concentrated urine and a small loose calculus which, in the great depth of the wound, I lost and never recovered. Deeply imbedded in the ureter at its junction with the pelvis of the kidney was an apparently branched stone, which, do what I would short of splitting the ureter (with every kind of instrument), I was unable to move. I therefore left it *in situ* believing that when the congestion of the kidney was lessened the kidney would diminish in size and the stone be less gripped by its pelvic tissues. I packed the wound with iodoform gauze and dressed it with wood wool. During the night the urine drained freely from the wound into the wood wool and owing to the relief of tension 12 ounces of blood-stained urine were passed naturally at one time. She progressed uniformly well without a single drawback, passing urine both by the wound and from the bladder every day. She was given ten grains of salol three times a day, which kept the urine sweet and the wound from irritation. Subsequently urotropine was substituted as the urine became alkaline. Instead of dressing the wound with wood wool I placed under her loins, cross-wise, an indiarubber bed pan, with air-water rim, which collected the draining urine and saved her from becoming wet On April 8th, I determined to make another attempt to secure the calculus and although it was gripped less tightly I had the greatest difficulty in extracting it on account of its shape and its depth in the ureter, but I was eventually successful It was pyramidal in shape, somewhat resembling a cocked hat, flat, with an excrescence at one end which became detached (this was mislaid by the nurse) The part that filled the ureter and completely "corked" it weighs 32 grains On May 28th she was able to be up, a few days later she walked about, and on July 5th she left the hospital in good health but the urine still issuing from the wound in diminishing quantity.

The case is remarkable in that suppression of urine resulted instead of distension of the pelvis of the kidney There can be no doubt that the secretion of an organ may be arrested by inhibitory nervous action But how was it the left kidney failed to secrete urine? Is there a similar stone there? Or can a stone in one ureter inhibit the action of both kidneys? I have seen total suppression of urine and death occur from passing a sound for the relief of stricture of the urethra Also how was it that there was no uræmia when suppression of urine lasted for 219 hours? The sudden rise of temperature to 108° probably signified its advent, which was however, forestalled by immediate operation It would occupy too much of your valuable space to discuss these questions in their entirety I must be content with recording the facts

I am, Sirs, yours faithfully,

Rugby, July 7th, 1904 CLEMENT DUKES

THE TREATMENT OF HÆMORRHOIDS AND ALLIED CONDITIONS BY OSCILLATORY CURRENTS OF HIGH TENSION

To the Editors of THE LANCET

SIRS,—In his paper on this subject in THE LANCET of *July 2nd*, p 19, *Mr T J Bokenham makes the statement* that the results of the treatment of hæmorrhoids and other minor troubles of the anus and rectum by high frequency currents are "far superior to those obtained by any other local treatment short of operation" Judging from the results given in his paper I do not think that any surgeon who has had much experience of rectal surgery will agree with this statement and I do not think it is one which should be allowed to pass unchallenged It is a well known fact that minor degrees of hæmorrhoids can often be cured by slightly stretching the sphincters by the occasional passage of bougies and I think the beneficial results obtained by the electrical method described were quite as much due to the slight stretching of the sphincters by the passage of the electrode as to the effects of the high frequency current

The treatment of "acute or recent capillary piles" by slightly stretching the sphincters combined with the application of suitable astringents and regulation of the bowels is the ordinary treatment in use at St Mark's Hospital and it certainly gives much better results than 14 cures in 25 cases, which is the percentage of cures claimed for the electrical treatment, and this without any of the risks of electrical or x ray burns which Mr Bokenham admits exist in the treatment by high-frequency currents and which in less experienced hands than his might result in serious damage to the patient So that, so far as hæmorrhoids are concerned, there does not appear to be any advantage in the treatment by high frequency currents, but rather the reverse

With regard to the treatment of simple fissure the electrical treatment certainly seems to have no advantage over the ordinary non operative methods The large majority of the cases of simple fissure which come to the out patient department at St Mark's Hospital are treated by local applications and are cured in from three to four sittings or even less and this without causing pain or preventing the patients from continuing their ordinary occupations One would have supposed that the passage of a large electrode into the rectum caused intense pain in cases of fissure, as such patients cannot usually even tolerate an examining finger.

I am, Sirs, your faithfully,

Cavendish-place, July 4th, 1904 P LOCKHART MUMMERY

INTRABRONCHIAL INJECTIONS IN PULMONARY DISEASES

To the Editors of THE LANCET

SIRS,—As I have largely devoted myself for many years to the development of the treatment of phthisis by direct injections, perhaps I may be allowed to make a few observations on Professor Paul Jacob's communication, referred to by your Berlin correspondent in THE LANCET of July 2nd? With his premisses—'the treatment of tuberculosis by medicine had hitherto failed because of the impossibility [?] of bringing a sufficient quantity of any drug into contact with the diseased parts by ordinary methods of internal administration"—everyone must agree I recognised it 13 years ago *and stated the matter three years later as follows* "To bring the remedial agent into direct contact with the diseased part is a principle so well recognised in surgery that it should require no argument to prove the rationale of extending its application to diseases of the respiratory system "[1]

Having tardily recognised a truism, Professor Jacob appears to have repeated a number of experiments on animals which were reported nearly 20 years ago—to prove the absorbent power of the lungs and that intrapulmonary injections could be performed "without any symptoms of suffocation ' The *Practitioner*, vol xxxvi, *1886*, reports similar experiments performed by Schrward and Reichert, and Professor Sterling recently informed me that it had been demonstrated years ago that a horse's lungs would readily absorb six litres of fluid It would appear, therefore, that in his preliminary observations and experiments Professor Jacob is somewhat belated The difficulty of placing fluids [illegible] bifurcation" of the bronchus [illegible] I said "If when the injec[illegible]be directed *to incline* or lie on [illegible] that the bulk of the fluid will gravitate in the desired direction"[2] This, however, was insufficient and I now use a revolving chair[3] which Dr William Ewart thinks ' has solved the problem ' Cocainisation is quite unnecessary

Passing the question of the particular drug to be injected *I come to Professor Jacob's difficulties* which, *from the Deutsche Medicinische Wochenschrift* of June 23rd, are, I gather, as follows first, as in inhalations the bulk is absorbed by the upper air passages, and secondly, a large quantity of the injected solution is coughed up immediately after the injection Well I wish to speak with great respect, but Professor Jacob has treated five human beings—I have treated nearly 200—and as I inject over *one hundredweight* of fluid a year I think I know, and am in a position to demonstrate, that he is in error

I am, Sirs, yours faithfully,

Southport, July 12th, 1904 COLIN CAMPBELL

ROYAL ACCOUCHEMENTS

To the Editors of THE LANCET

SIRS —Dr W Williams in his valuable lectures on Deaths in Childbed, states in THE LANCET of July 9th, p 65, as follows "The death of Princess Charlotte of Wales and her unborn son, a death which led to the ascent of the late Queen Victoria to the throne, did much to accentuate this progress [that of men midwives in public favour] and for the first time in our history a Queen of England was attended in her confinement by a man ' In the interests of historical accuracy may I point out that Queen Charlotte Sophia, the consort of George III, was attended by the celebrated Dr William Hunter It is true that, in accordance with the custom of those days, Dr Hunter waited in an anteroom to give his assistance if and when it was needed by the midwife He was first called to attend the Queen in 1762 when he informed the King, so it is related, that she was "with bairn" An autograph diary of his attendance upon Her Majesty, including three confinements, is preserved in the Hunterian Museum in Glasgow From the birth of Queen Charlotte's youngest child in 1783 there was no strictly royal birth in England until that of Queen Victoria's eldest child in 1840 In the meantime obstetric physicians had attained to an honourable status and I question whether the term "man midwife" was applied to the leaders in the art much after the middle of the eighteenth century. William Hunter himself, although Horace Walpole calls him in banter "that Scotch nightman," was an M.D., F.R.S., and Foreign Associate of the French Academy, being in fact one of the foremost men in the medical profession in England in his century (see the writer's memoir, "William Hunter, Anatomist, Physician, Obstetrician"). As regards the Princess Charlotte of Wales it is commonly said that her death in 1817 occurred *after giving birth* to a still-born male child.

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[1] Transactions of the Royal Medical and Chirurgical Society, vol lxxviii, 1894

[2] *Ibid.*

[3] Described in the Brit. Med Jour of Dec. 15th, 1903.

I am, Sirs, yours faithfully,

Weymouth street, W., July 13th, 1904. R. HINGSTON FOX.

THE PASSING AWAY OF THE ALL-ROUND INTELLECTUAL GIANT.

To the Editors of THE LANCET.

SIRS,—Time was when the pursuit of scientific research might have been likened to the unravelling of a rope into its strands, whereas now the life of a man seems not long enough to devote special and complete study even to a single strand. The enormous acquisition of facts and the prospect of so many possibilities and probabilities opened up day by day overwhelm the mental and physical capacity of a single individual who therefore finds that he is compelled to resign so much of the task of research to others, confining to himself an apparently small field in which to labour but in which enough material appears for a life-long exploration. The possibility of gaining a general knowledge of natural science grows more remote as revelations are made. Innumerable paths of study are opened up in which, if revelation is to be anything like complete, it is impossible for all to walk. In a word, specialism is compelled upon those who would wrest from Nature her secrets and who would make an attempt to formulate her designs. There is no limitation to study in any given subject. No man will ever be able to sit down and say with a particle of truth, "I have finished the task which at the beginning was placed before me," even though he has "specialised." "Specialising" must eventually lead to the extinction of the "all-round" intellectual giant but the great danger of special study is that the scientific *tout ensemble* may be lost sight of and an inability to comprehend the grand scheme may blight our chances of ever throwing a light on life's great problems. The pieces may be found but who shall fit them in their proper place so that an intelligible whole may be presented? An expert in one subject is very often completely unintelligible to an expert in another subject. Both are engaged in a study of natural phenomena but their individual findings may have no apparent relation to each other. Even in the same denominational class of study one man deviates into a branch of the subject and another man into another and each possesses a special knowledge which cannot be shared. Thus, to take but one example, there are the technical chemist, the "pure" chemist, the analytical chemist, and the pharmaceutical chemist, all well grounded in the principles of that section of science which each has studied, each pursuing a perfectly separate and distinct line and each practically ignorant of the others' gain of knowledge. What chance, again, have such men of gaining any exact knowledge of, let me say, physics or astronomy? The old familiar adage "Jack of all trades, master of none" appears in a new light and its sentiment is very keenly realised in the pursuit of scientific knowledge and in those professions in which such knowledge is indispensable. Giant intellects there are amongst us but owing to the enormous growth of detailed knowledge the "all-round" man must become as extinct as the dodo. The man who thought that he possessed a general knowledge 20 years ago realises with Newton that he has been only like a boy playing on the sea-shore diverting himself in now and then finding a smoother pebble or a prettier shell than ordinary, while the great ocean of truth lay all undiscovered before him. Instances arise now and then of giant intellects comprehending the whole domain of physical science. Such a one was the late Sir George Gabriel Stokes, to whom recently and most deservedly a memorial was placed in our national shrine by the side of those of Newton, Herschel, Darwin, Adams, and Joule, but such instances must necessarily diminish as knowledge spreads.

I am, Sirs, yours faithfully,

July 12th, 1904. CHEMICUS.

CHOLERA IN MESOPOTAMIA AND PERSIA.

(FROM THE BRITISH DELEGATE TO THE OTTOMAN BOARD OF HEALTH.)

DURING the past two weeks there has been a diminution of the cholera outbreak in Turkish territory, but an extension of the disease in Persia. Its presence has also been reported from places on both shores of the Persian Gulf.

The following returns from Basra are in continuation of the figures given in my last letter[1]:—

From June 4th to June 11th ...	14 cases and	11 deaths.
,, ,, 12th ,, ,, 18th ...	10 ,,	5 ,,
,, ,, 19th ,, ,, 25th ...	4 ,,	3 ,,
,, ,, 26th ,, July 2nd ...	4 ,,	4 ,,

The outbreak in the Basra lazaret is now at an end. Between May 29th and June 3rd 25 cases and 15 deaths occurred here; in the following week the figures dropped to 12 cases and 8 deaths; there was a single death on the 12th; and finally, on June 21st the husband of a patient already convalescent was attacked by cholera and died. Active measures are in progress for the removal of the lazaret from its present position to a more convenient site on the eastern bank of the river, opposite to the town of Basra.

At Bagdad cholera reappeared on June 4th after an interval of just two months, during which the city was believed to be free from the disease. The following figures have since been reported:—

From June 4th to June 6th ...	? cases ...	4 deaths.
,, ,, 8th ,, ,, 11th ...	9 ,, ...	8 ,,
,, ,, 15th ,, ,, 22nd ...	5 ,, ...	2 ,,
,, ,, 23rd ,, July 3rd ...	9 ,, ...	7 ,,

It is probable that these figures are below the truth. On June 21st a case of cholera, which proved fatal next day, developed on board the English gunboat stationed in the Tigris. The ship was consequently removed some distance below Bagdad where she underwent ten days' isolation, thorough disinfection, and repainting.

The outbreak in the Shiah city of Nedjef, the commencement of which was reported in my last letter, proved to be a severe one. After the single cases there on May 24th and 31st a few more cases occurred in the first week of June. But on the 9th of that month the disease became suddenly epidemic, as shown by the following figures:—

On June 9th and 10th	155 cases ...	93 deaths.
From June 11th to June 18th...	260 ,, ...	297 ,,
,, ,, 19th ,, ,, 24th...	67 ,, ...	75 ,,
,, ,, 25th ,, ,, 29th...	18 ,, ...	13 ,,

In the other holy city of the Shiahs, Kerbela, the epidemic began rather later, apparently about June 14th. The following are the subsequent returns from Kerbela:—

From June 14th to June 17th...	3 cases ...	2 deaths.
,, ,, 18th ,, ,, 24th...	122 ,, ...	207 ,,
,, ,, 25th ,, July 1st ...	27 ,, ...	177 ,,

The majority of fatal cases here were only discovered after death had occurred.

A severe outbreak of the disease has also occurred at Hilleh, on the Euphrates, in the marshy district between the two Shiah cities just mentioned. For the past two or three weeks, indeed, the centre of intensity of the cholera epidemic has been in this neighbourhood. The following are the returns for Hilleh:—

From June 6th to June 8th...	5 cases ...	2 deaths.
,, ,, 9th ,, ,, 14th...	116 ,, ...	87 ,,
,, ,, 15th ,, ,, 24th...	143 ,, ...	197 ,,
,, ,, 25th ,, ,, 30th...	18 ,, ...	36 ,,

Smaller figures have been reported from a large number of other places in the Hilleh district. Elsewhere, with the exception of certain tribes in the Montefik district, the reported cholera mortality has been considerably less. But until the past week the infection was present in most of the places mentioned in my former letters and in some others not mentioned there. But fortunately in most the epidemic is now a declining one and the total number of cases and deaths reported from all places within Turkish territory fell from 481 and 852 respectively in the week ending June 28th to 210 and 355 respectively in the week ending July 4th.

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[1] THE LANCET, June 25th, p. 1812.

It may be hoped, therefore, that the worst of the epidemic is over on this side of the Persian frontier. But the disease is spreading in Persia and the danger of its passing up to Transcaspia and the Caucasus and so threatening Europe is one that cannot be ignored.

At Khanikin, the Turkish frontier town, only a small number of cases have been officially reported. At Kermanshah, in Persia, the following figures have been returned since the date of my last letter:—

From June 1st to June 8th ... 39 deaths.
" " 9th " " 15th ... 13 "
" " 16th " " 21st ... 59 "
(and as many cases).
" " 22nd " " 29th ... 49 deaths.

These figures indicate a slight recrudescence of the disease in the second half of June. On the 17th it was announced that cholera had appeared at Koum, a town of importance 24 hours' distance from Teheran, and also in the neighbourhood of Bushire on the Persian Gulf. On July 5th a telegram from Russian sources was published in the newspapers stating that 150 deaths from cholera were occurring daily in Teheran itself. The Turkish sanitary administration has received no confirmation of this announcement. But the fact that cholera is present in the Persian capital is reported, and last week the Ottoman delegate on the Teheran sanitary board was himself attacked by the disease and died after a short illness.

No further news has been received of the reported outbreak of cholera at Bushire but on July 1st the disease was stated to have appeared at Mohamera, the Persian port on the Shatt-el-Arab, a short distance below Basra.

Finally, it has to be added that cholera was reported to have broken out in the Bahrein Islands, near the southern end of the Persian Gulf, in the middle of May; that on June 20th the presence of the disease was reported from two villages (Darein and Narvet) in the district of Katif, on the western shores of the Gulf; that on June 28th a telegram from Basra announced that cholera had been present for a month in Katar (the district south of Katif) and had just appeared in Katif itself and at Dekin (a name I am unable to identify); and that about the same time a few cases of cholera occurred at Muscat and in two villages opposite to this port.

Constantinople, July 8th.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

The Parsi Maternity Hospital in Bombay.—A New Water-supply for Mussoorie.—The Decline of the Plague Epidemic.—Increase of Enteric Fever at Lahore.—The Health of Bombay City.

THE Parsi Maternity Hospital in Bombay has proved a valuable boon to the community and has gained so highly in popular favour that during the past year very nearly half the number of Parsi children born in the city had their birth in this institution—viz., 529 out of 1168. Some 15 or 20 [illegible] responsible for it. The hospital was started and has continued to progress ever since. The death-rate of women in the hospital does not come to even ½ per cent., while outside the hospital the death-rate amongst Parsi women is 3 per cent. It is a curious fact that there have always been more births in the institution from July to December than in the first half of the year, but for this there is no explanation. The same proportion of births during the first half and the second half of the year holds true in the case of births outside the hospital. Nearly 20 per cent. of the women admitted were treated and fed free of charge. The patients come not only from the city but from all parts of the provinces and even from distant parts of the country. The hospital saves the lives of children as well as of mothers because it is found that the death-rate among children born outside the hospital is almost double the death-rate in the hospital. Being con- [illegible] it is an [illegible] supply at Simla other hill stations are moving in this direction. At Mussoorie the Kimpti Falls are to be made use of and a scheme for electric lighting also by utilising these falls is under consideration. The main reservoir is to be on Blucher's Hill, several hundred feet above the town. From the main reservoir a pipe-line is proposed to be run to the top of Vincent's Hill and another to Camel's Back Hill, the water-supply of Landour being treated separately. The available quantity of water from the springs is given at about 10,000 gallons per hour and the quantity to be pumped will provide water at the rate of 11½ gallons per head. Distribution will be by means of pressure tanks spread over the area with hydrants and also house-to-house supply if required.

The plague epidemic is rapidly on the wane, only 7762 deaths being reported for the whole of India during the week ending June 11th as compared with 13,770 for the previous seven days. The distribution of the mortality is as follows: Punjab, 6491 deaths, as against 12,219 the week previously; Bombay districts, 416, as against 547; Kashmir, [illegible] 165; United [illegible] against 129; [illegible] 71; Karachi, [illegible] is danger of a [illegible] aving already been reported

I *regret to hear of a considerable increase of enteric* fever in the Lahore district during the past few months necessitating the issue of special orders particularly with regard to preventing the spread of the disease by men who are convalescent from it.

The report of the health officer of Bombay for the first quarter of 1904 shows a remarkable improvement on the mortality figures as compared with all the corresponding quarters since 1896 There were 7524 deaths from plague which was almost the only factor in the increase over the normal mortality. The returns have for the last year or two been more satisfactory, inasmuch as the plague returns practically account for the increased mortality, whereas previously the increase was unexplained. The diminished plague mortality may be due to the measures taken, including evacuation, or to an acquired immunity of the people. The health officer asks for a great deal, however, when he says: "If we can evacuate the infected houses, remove all insanitary and plague-stricken areas, provide the people with suitable dwellings, open up insanitary areas, and continue to enforce sanitary measures, we can curtail the course of the disease to controllable limits." If dependence is placed on such Utopian ideals the plague is likely to last some time in Bombay. Overcrowding is the great evil in Bombay city, by which is meant that the number of persons and animals collected together in a certain space, room, or area, workshop, factory, hospital, tent, hut, &c, is so great that it vitiates the air, diminishes vitality, and death and disease result. The health officer complains that the overcrowding has been accentuated by the displacement of many people by the Improvement Trust schemes, that this displaced population has not yet been provided for, and that there are urgent want and demand for cheap dwellings for the poor.

June 24th.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

University Matters.

[illegible] been approved for the [illegible] fect after the issue of [illegible] or the degree will have to present a thesis embodying observations in one of the following subjects: (*a*) [illegible] anatomy; (*b*) physiolog[illegible] logy; (*d*) bacteriology; [illegible] (*g*) medicine; (*h*) menta[illegible] or public health; (*j*) toxicology; (*k*) legal medicine; and (*l*) midwifery. In addition to this the candidate will be required to pass a general examination in the principles and practice of medicine but it will be in the power of the board of examiners to exempt a candidate whose thesis is of exceptional merit from any part of these examinations. The council has decided to constitute a new grade amongst the members of the junior staff—that of special lecturer. The appointments will be of a personal nature and *will not be attached to any department* or subject, but will be made on account of special distinction gained in any branch of the department by any lecturer. The special lecturers will have to take their ordinary share in the work of their departments under the direction of their professors. Two of the first appointed special lecturers belong to the medical faculty—viz., Mr. William Wright, special lecturer on osteology, and Dr. James Miller, special lecturer on bacteriology. At the recent Congregation for the conferring of degrees each of these gentlemen received the degree of doctor of science, which was conferred upon them in respect of theses submitted for the purpose. Dr. James Kerr, medical officer to the late School Board of London, and now the occupant of the same position under the education authority of the London County Council, has been appointed Ingleby lecturer for the year 1905 and will give two lectures during that year on feeble-minded children. Dr. John H. Watson has been appointed second demonstrator of anatomy. The many friends of Professor Gilbert Barling have seen with great pleasure that he heads the list of those elected to fill positions on the Council of the Royal College of Surgeons of England.

Health of Birmingham.

The report of Dr. A. Hill (who held office up to the end of last September) and of Dr. John Robertson (who then succeeded him) on the health of the city for the year 1903 has recently been issued. It states that the year was a remarkable one from the point of view of its healthiness. The death-rate continued low during the whole of the year and "we have now the satisfaction to record that the annual mortality rate was the lowest on record. Indeed, it is probable that the rate during last year was lower than in any year since Birmingham emerged in the distant past from the condition of a village into that of a small town. The mortality-rate was 17·2 per 1000 last year, against 18 in the previous year and 20 in the previous ten years." It is pointed out that this favourable position was largely due to the weather which, by keeping the temperature at a mean, produced a favourable bill of health. The report continues, "It is possible, however, with reasonable cleanliness in our houses, in our food supplies, and in our general surroundings, that warm weather shall not have the same disastrous effects as it has had in past years, and that improved moral and physical qualities resulting from better education and increased prosperity, individual and general, will confer the means of securing greater protection from the dangerous and fatal rigours of the winter season. If we consider the progress made in the health of the city during the 30 years commencing with 1874, when the death-rate was 26·8, and ending with 1903, when the death-rate stood at 17·2, a diminution of 40 per cent., we feel justified in the anticipation that very great benefits are in store for our race in the future." The city contained 111,309 occupied houses, an increase on the 1896 figures of 10,452. The marriages registered in the city were 4881, a rate of 18·4 per 1000. The births were 16,866, or 31·7 per 1000. Only once since 1873 was the birth-rate lower and that was in 1894. The rate for that year was 31·6. The infantile mortality rate was 158 per 1000 births and in this Birmingham has an unenviable prominence, relatively speaking. The serious epidemics during the year were of scarlet fever, though the number of cases was not so high as in 1902, and of diphtheria, of which there was a larger number of cases than in any year since 1896. Out of 251 cases of small-pox there were only 12 deaths. There were 1025 deaths from tuberculous disease and the medical officer recommends the adoption of a system of voluntary notification. He adds that there are in Birmingham at any one time, probably at least 3000 cases of phthisis and alludes to the possible necessity of a corporation sanatorium. The officers of the department represented 304 houses as unfit for habitation during the year. 65 closing orders were obtained, 51 notices of demolition were served, and 34 houses were demolished. In connexion with the milk question the report says: "It is very important that effective and uniform action should be taken in the matter of supervising cowsheds outside the city, from which part of the city milk-supply is drawn. In these rural districts milk is produced under filthy conditions in a good many instances and sent into the city. In summer time such milk is probably one of the means of setting up epidemic diarrhœa among young children." The assistant medical officer of health is at present making an inspection of every milk-shop in the city with a view to drafting some general regulations in regard to their conduct, as it is found that contamination of the supply is probable from the conditions in which the milk is kept in some of these shops. The inspectors condemned during the year 223 tons of bad meat, 93 tons of bad fish, and 17 tons of bad fruit. The 639 city bakehouses include 41 underground, and of these 22 have been voluntarily closed. 14 others have been certified as fit, four were refused certificates, and one case was pending when the report was written. The health visitors made 26,170 visits during the year and the table relating to their work shows that 3935 tenants were advised to open windows, 1109 to get rid of lodgers, 335 to wash their children, and 622 to feed their infants properly.

Small-pox in the District.

Another case of small-pox has been reported to the Birmingham medical officer of health in the person of a man who came from Worcester in an infectious condition, the symptoms of the disease becoming apparent a few days later. The man was removed to the hospital, the house was disinfected, and those who had been known to be in contact with him were placed under inspection. In Worcester there has been an outbreak originating in an inmate of the casual ward of the workhouse. The case was of a mild character. Another inmate of the same ward, who had come there from one of the lodging-houses in the city, has also been discovered to be suffering from the same disease. A malignant case of small-pox has been discovered in the Cannock Chase district, in the person of a man, a native of Stafford, who applied for admission to the Cannock workhouse early one morning, stating that he had been wandering about all night. As it was clear that he was suffering from small-pox the master of the workhouse refused him admittance and he was taken into the small-pox hospital. Previously to coming to Cannock he had slept at a lodging-house in Rugeley. Dr. J. G. Beasley, medical officer of health to the Rowley district council, reported to his authority that a female small-pox patient had escaped from the isolation hospital under the control of the South Staffordshire Joint Small-pox Hospital Board and was, after some days' lapse of time, still at large. The police and workhouse officials for a distance of ten miles round the district had been communicated with but no trace of the woman could be found.

July 12th.

MANCHESTER.

(From our own Correspondent.)

Mersey and Irwell Watershed.

It really seems as if the Mersey and Irwell joint committee was beginning to make some progress and that its efforts for the purification of the rivers and streams of the watershed were not in vain. On July 5th a report was presented by Mr. R. A. Tatton, the chief inspector, which was on the whole encouraging. In commenting on the report, Sir J. T. Hibbert said that the watershed included 95 authorities and had a population of 2,502,000 persons. There are five important rivers in its area, of which the Irwell and the Rouch have 286 manufactories on their banks; the Irk, in old days a noted trout stream, 45; the Medlock, 15; and the Mersey, 98. One serious form of pollution with solid matter, he said, was now a thing of the past, but a few years ago all the cinders and other solid rubbish from the various works were tipped into the streams or placed where the winter floods would wash them from the banks, for the readiest way of getting rid of a nuisance was to pass it on to the neighbour lower down and the gradual silting up of the river-bed was a matter with which the manufacturers did not concern themselves. The sludging of the mill lodges, as the reservoirs for the works are called, was for many years a serious difficulty, but that has been overcome. Serious pollution, however, still takes place when condensing lodges, in which polluted water is used, are run off. Mr. Tatton "mentioned the difficulty that existed with the stone polishing industry," but the solid matter from that source is now intercepted. 12 years ago there were 27 sewage works in urban districts, now there are 86, and ten in rural districts. Now there are only two urban districts without sewage works and both have schemes in hand. In 1891 there were 191 works without any system of dealing with their effluent; now there are only five. 278 manufacturers have now efficient purification plant, as against 45 in 1893. No doubt each of the various industrial processes has its own difficulties Of 120 dye works 88 have efficient plants, of 75 bleach works are 56 efficient, of 59 woollen works 44, and of 48 print works 38, while only three out of 12 breweries can claim efficiency The rivers are now so much less filthy than they were that the water is becoming more useful for manufacturing purposes Sir John Hibbert is not very sanguine, for he says they can never expect to make the rivers attractive, but 'they could make the water of commercial service and they could do much for the health of the people living on the river banks" This is a somewhat melancholy conclusion to come to, for these streams have even yet traces of beauty in quiet reaches, swirling pools, and rippling shallows the sight of which makes one feel that man should be ashamed to foul everything which he touches There is said to be "much less decomposition going on in the water of the Ship Canal than formerly, and the formation of gases is nothing like what it once used to be" Let us hope that there will be still further improvement for it is impossible to imagine, and one would think to endure, anything more malodorous than the summer fragrance of the Ship Canal Sir Henry Roscoe agreed in the main with Mr Tatton's report and spoke of the difficulties connected with special trades as, e g, that of the fellmongers, 'owing to the noxious character of the effluent' As to the progress made in the application of scientific methods of filtration he said that in 1898 there were only six and a half acres of artificial filter beds in use in the watershed There were now 105 acres while the area for land filtration had only increased from 913 to 1151 acres The volume of sewage to be filtered at 75 gallons per head of the population, amounted to 187,500 000 gallons a day To carry out artificial filtration at the rate of 250 000 gallons per acre, which gives 'a satisfactory effluent within the limits of impurity allowable, would require seven and a half times the present area, or 750 acres, which he thought we might look forward to Land filtration would require some 10 000 acres, which would be out of the question Manchester possesses half the total area of artificial filters at work in the watershed but they are not sufficient, and the rivers committee is making 'praiseworthy efforts to complete its scheme As regards the general results, Sir Henry Roscoe said that "the water which previously was unfit for industrial purposes was now usable There seems to be no sufficient reason for being content with this partial purification of Lancashire rivers and although Sir Henry Roscoe speaks cautiously he says that much more remains to be done

University Students Congress

The first English and Welsh Inter Universities Students Congress, to give it its full title just held in Manchester has had an encouraging success Its objects were to

the students and to advance

The universities represented

Durham, Leeds Liverpool,

Wales, and St David's College, Lampeter, and the delegates numbered about 40 They were welcomed by Dr Alfred Hopkinson Vice Chancellor of the University of Manchester, who was able to say pleasant things all round He touched on three of the subjects down for discussion one being the provision of residential halls which he thought of 'enormous importance to university life He next spoke of the question of volunteer corps in connexion with the universities There was one in connexion with the University of Manchester and "he hoped the movement would grow and that it would be felt to be a desirable thing for members of a university to prepare themselves to take a part, if need be, in the national defence' Professor Schuster proposed a motion on 'The Reform of University Degree Courses,' which ran as follows —

on ;

This was passed after considerable discussion by 23 to 6 Professor Schuster in his reply said that the medical faculty stood on a different footing from the arts, and pointed out that as regarded the University of Manchester the practice on the medical side was very much what he advocated 'No classes were given in the examinations at all except for the M D degree, preparation for which was understood to consist of original work." Mr F T H Davies (Birmingham) proposed a motion in favour of an inter university volunteer corps In addition to its importance as regards national defence he spoke of it as tending to companionship and to the obliteration of the division between the faculties of arts and medicine Mr William Thorburn related the conditions under which the Owens College company of the 2nd Volunteer Battalion Manchester Regiment which he commanded until recently, came to be formed He regretted very much that he had to give up the command of the company, "but the way it had to be conducted in order that it might fit in with the general working of the battalion rendered it impossible for him and also for many of the students to carry on their work" He said that there were many students who would be glad to give a month to work in camp in association with a university battalion, and in that way "they would obtain a training which would be of the greatest value to them in after life in the army, in the Indian Medical service, and in other positions all over the world' He suggested the appointment of a committee to report to the congress next year and it was decided to form a committee of five There was a strong and apparently unanimous feeling in favour of the movement

Appointment and Awards at the Victoria University, Manchester

Dr A Hill Griffith has been appointed clinical lecturer in ophthalmology A Fellowship in sanitary chemistry has been awarded to Dr W B Ramsden The Dauntesy entrance medical scholarships were awarded to Marion Stocks and A E Woodall and the Dumville surgical prize to P Talbot Various awards were also made on the arts side

Scarlet Fever at Warrington

Scarlet fever has been very prevalent at Warrington In the first quarter of the year Dr J G Gornall the medical officer of health, has reported that 232 cases were returned The average number for the last ten years has been 37 Of the 205 cases removed to hospital eight died, or 3 9 per cent Dr Gornall has notified the head teachers of the elementary schools that discharged patients must not be readmitted to school till he has given a certificate that they are fit to return and this certificate he will not grant for some weeks in any case The chairman of the health committee commented severely on the action of the education committee in not acceding to the suggestions of Dr Gornall to close the schools immediately

July 12th

IRELAND

(FROM OUR OWN CORRESPONDENTS)

Coombe Hospital, Dublin

THE annual meeting of the supporters of the Coombe Lying in Hospital was held on July 6th, the Lord Mayor being in the chair When the report had been read Mr T G. Stevens, in moving its adoption, alluded to the great increase in the number of patients during the last 12 months and to the increase in the number of students attending the hospital. The Rev Dr Smyhe seconded the motion and said that the hospital had now risen to a high degree of eminence and usefulness The Lord Mayor in putting the motion, remarked that as an old member of the hospitals committee of the corporation he noted with pleasure the improvements that had been made in the buildings and promised that he would recommend his colleagues to give an increased grant to the institution

Apothecaries Hall of Ireland

The annual meeting and dinner of the Apothecaries Hall of Ireland were held on June 25th, Dr A Atock, the governor, being in the chair Sir Charles Cameron dwelt on the ancient foundation of the institution which dates from the year 1746 and to the charter of 1791 under which it now exists The governor mentioned that there were over 500 apothecaries on the present roll besides a large number of assistants and said that the diploma of the Hall not only qualified in pharmacy but also conferred the right to practise in medicine and surgery

Health of Belfast during 1903

The report (rather a belated one) of Dr H Whitaker, superintendent medical officer of health of the city of Belfast, for the year 1903, has just been issued in printed form. The total number of deaths from all causes has been less numerous (7169) than in any of the past six years, and the deaths from zymotic diseases (792) are also fewer, "a matter for thankfulness," considering that in each of the previous two years the deaths were over 1000. In 1903 there were 2902 cases of infectious disease notified, and attention is called in the report to the fact that this number is smaller, but I fear that the notification of disease is carried out (at least in comparison with any English city) in anything but a complete way. The number of typhoid fever cases notified was only one-third of those notified in 1901. Two of the most serious of the zymotic diseases are not notifiable—measles and whooping-cough—and were very prevalent during the year. There were 11,488 births in Belfast (the population of which is 349,180) in 1903 and 7169 deaths, showing a natural increase in the number of inhabitants of 4319. Of the total number of deaths (7169) during 1903, 792 were due to zymotic diseases and 2675 to chest affections, making a total number of 3467, or rather less than one-half of all the deaths registered as having occurred in Belfast. What is the cause of the deaths of the remaining 3702? It is deplorable to read in this report such a humiliating statement from the health officer as: "I regret that I have no information which would enable me to place before you the causes of death of the other 3702. In most of the other large centres of population the medical officer of health is supplied with this information and with us it could be obtained, as also the names of the streets and numbers of the houses in which the deaths occurred, by arrangement with the registrars of the respective districts. I know nothing of where any deaths take place except from the Registrar-General's returns, which merely state that so many deaths occur in a certain district. As these districts comprise hundreds of acres and thousands of persons, it is impossible for me, even approximately, to state where they occurred." Again, of the 2675 deaths from chest affections, 1030 were attributed to phthisis, while of the remaining 1645 deaths attributed to diseases of the respiratory organs Dr. Whitaker says: "I have no means of estimating the numbers of the different forms of chest affections." How can one criticise a report in which the medical officer of health of a great city like Belfast, with a population of nearly 350,000 people, calmly admits that he cannot get at the causes of the death of 3702 persons and that he is unable to differentiate under their proper heads 1645 cases of death from diseases of the respiratory organs? Truly the state of the science of public health in Belfast is embryonic. Speaking of phthisis it is a remarkable fact (surely needing some explanation) that while in Belfast during the year 1903 one out of every 348 inhabitants died from phthisis, it is said in this report that there were no deaths (p. 29) in the Forster Green Hospital for Consumption and Chest Diseases during that year. Of the deaths from zymotic diseases (792), 293 were from measles (125) and whooping-cough (168). Surely such statistics indicate that such maladies should be made notifiable, while some steps should be taken to prevent 277 deaths from diarrhœa (which is classified under the head zymotic diseases). On p. 5 a table is given showing the number of cases of infectious disease notified as having occurred in the several dispensary districts and nearly six pages are devoted to describing the boundaries and characteristics of these districts, which is absolutely useless, as without a map (which would occupy one page) it is impossible to follow such a description; while more than seven pages are filled with an account of the weather in the various months in relation to the prevailing diseases, and four pages have a list of streets in which typhoid fever occurred in 1903, which is really of no value. The total number of pages of the whole report is 54 and of these I think that those 17 which have been referred to might be entirely omitted as being quite unnecessary. This report is far from satisfactory; it gives the impression that the public health department in Belfast needs great reforming. The medical officer of health makes many most useful suggestions but apparently he gets little support from his committee. Matters are allowed to drift on in an aimless way, no new departure comes as a suggestion from the public health committee; everything needs to be forced on it from the outside; its new infectious diseases hospital will not be ready until Nov. 1st, 1905, and it has still to grapple with the consumption question. The policy of putting off all reforms only ends in disaster and now the citizens of Belfast will have to be taxed heavily for a number of things (infectious diseases hospital, tuberculosis sanatorium, main drainage, &c.) which should have been dealt with one by one and not altogether. In Belfast in public health affairs what is needed is someone who would really guide and direct the public health committee as to those necessary reforms which are pressing and which must be passed if the city is to maintain its high position.

Fermanagh County Infirmary.

Dr. L. Kidd, surgeon to the County Fermanagh Infirmary, has been granted an increase in his salary of £25 per annum. The sum of £119 15*s*. 6*d*., the result of public subscription, has been expended in furnishing the institution and Mrs. F. Wrench has given as her contribution a bed and mattress worth about £37.

Proposed Sanatorium in Belfast.

The public health committee agreed at its meeting on July 7th to recommend the Belfast city council to erect a sanatorium for 100 consumptive patients with provision for paying patients, the buildings to be of wood or iron on proper foundations. The cost of site, building, &c., will probably be close on £20,000 and the cost per bed per annum will be about £50. It does not recommend that notification of tuberculosis should be adopted as it would, it is said, cost too much money in fees paid to pathologist and medical men (from £700 to £800 per annum). The matter is to be arranged finally at an early meeting of the corporation. That the matter has proceeded so far is really due to the unwearied efforts of Mr. Robert Brown (secretary of the Ulster Society for the Prevention of Tuberculosis) and the decided action of the Local Government Board in pointing out to the public health committee its obvious duty in the matter.

The Cowan-Heron Hospital at Dromore.

At the fourth annual meeting of the supporters of this institution, held on July 7th, it was reported that there were at the beginning of the year 1903 six patients and since then 56 had been admitted—that is, there were 62 patients in all treated during the year. Most of the cases were medical. Mr. W. Cowan-Heron, the generous donor of the hospital, has presented outdoor shelters for patients. The income for the year was £307 18*s*. 3*d*. and the expenditure was £291 0*s*. 8½*d*., leaving a balance of £16 17*s*. 6½*d*.

The Small-pox Epidemic at Limavady.

At a meeting of the Limavady board of guardians held on July 11th the chairman reported that the last small-pox convalescent was leaving hospital that day.

July 12th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Prevention of Dust on Roads.

AT a meeting of the Academy of Medicine held on June 28th Dr. Guglielminetti of Monaco read an important paper on the application of tar and tar products to roadways. Dr. Guglielminetti has done much to encourage this practice in France. At the present day the tendency is to use not tar itself but westrumite, which is a mixture of the heavy oils of tar emulsified by means of ammonia; a proportion of it, amounting to 5 or 10 per cent., is added to water which is then spread on the roads by an ordinary water-cart. The process is not expensive (12 centimes per square metre) and three or four consecutive waterings appear to produce a lasting effect. Moreover, the use of tar, or rather of tar oils, was attended by two inconveniences which it is hoped will not occur with westrumite. These were (1) that on roads having a gradient of more than 3 in 100 a tarry layer which was slippery for horses formed on the surface and (2) that in order to obtain good results it was necessary to have a succession of fine days and roads perfectly dry and in good condition. For the purpose of making a satisfactory comparison one half of one of the great "avenues" of Paris has been treated with tar and the other half with westrumite. It has already been ascertained that air collected on the surface of ground treated in this way contains exactly half the number of germs found in air collected on the surface of an ordinary road.

Tuberculous Children in the Hyères Sanatorium.

At the same meeting of the Academy of Medicine M. Vidal made a communication from which it appeared that the proportions of the sexes among the children admitted were 345 girls and 272 boys—i e an excess of 73 among the girls Of these girls 210 suffered from bronchitis and similar conditions and 135 from pulmonary tuberculosis The girls represented 55 per cent of the total cases of bronchitis and other affections of the same group, and 57 per cent of the total cases of pulmonary tuberculosis

Successful Treatment of Fractured Femur with Metallic Hooks

At a meeting of the Surgical Society held on June 29th M Dujarier showed a man, 30 years of age, on whom this method had been used, radiographs taken some before and others after the treatment were also shown The fracture was at the junction of the upper third and middle third of the femur and there was considerable overlapping of the ends of the bones After making an incision completely reducing the fracture and removing a splinter of bone M Dujarier united the broken ends of the bone by means of a metallic hook (*agrafe métallique*) The result was perfectly successful and a radiograph taken two months after the operation showed the two fragments united end to end without the slightest deformity There was no shortening and the man walked without any limp

Opotherapy in the Treatment of Cirrhosis of the Liver

At a meeting of the Therapeutical Society held on June 22nd M Hirtz showed a patient who had improved considerably under hepatic opotherapy On admission to hospital he suffered from œdema and pronounced ascites The liver was small the spleen was large and the collateral circulation was well marked The patient was put on milk diet to which were added 120 grammes of fresh pig s liver bruised into soup Four litres of fluid were removed by paracentesis and fluid continued to flow from the wound for several days The amount of urine rose rapidly from 400 grammes to 2000, 2500 and 3000 grammes a symptom which was very favourable in respect of prognosis The œdema and the collateral circulation gradually disappeared and there was no more formation of ascitic fluid It was well known that the results of this kind of treatment were not always so good as those now described and up to the present time no means had been found for distinguishing the cases in which opotherapy would succeed

Resection of the Knee for Bacterial Osteo arthritis

At a meeting of the Sociéte de l Internat des Hopitaux de Paris held on June 23rd M Peraire showed a middle aged man whose knee joint he had resected eight years ago for bacterial osteo-arthritis The patient had previously been treated without any benefit by splints, blisters and application of tincture of iodine It was necessary to remove 13 centimetres of bone substance, the result was satisfactory and the patient used a sole of only 8 centimetres in thickness

Temperature of the Body obtained from the Urine

M Mantoux discussed this subject at a meeting of the Société Médicale des Hopitaux held on July 1st He has found that in the human subject the taking of temperature in the urine is both easy and more correct than any other procedure used for the purpose except the method by the rectum, all that is required being that the person should micturate on the bulb of a registering thermometer The differences between temperatures taken in this way and those taken in the rectum very seldom exceeded 0 5° C and were due either (1) to faulty methods of observation, such as insufficient micturition and imperfect sensibility of the thermometer or (2) to physiological retardation of the variations of the central temperatures This retardation depended on the quantity of the urine and on the rapidity with which the central temperature varied Without being applicable in all cases the taking of body temperature in the urine might be of real service. By its convenience and accuracy it was specially indicated for use by tuberculous patients who often had to take their temperatures several times a day for long periods In these patients it would provide a means of avoiding errors due to psychical causes but, on the other hand, it would give no information as to the sudden and transitory variations in temperature which in some cases followed muscular exercise

Military Law and Medical Men

The Chamber of Deputies has been discussing the Military Bill (*Projet de Loi Militaire*) reducing the duration of service in the active army to two years and has agreed to Article 24 which refers to medical students It provides that medical men and medical students who have kept 12 terms and at the end of their first year of service have passed the examination of *médecin auxiliaire* shall receive this appointment and shall complete their second year of service as *médecins auxiliaires* The conditions applicable to the medical service of the army are defined by Article 25 which provides that candidates for the medical department of the army (*élèves en médecine du Service de Santé Militaire*) and students of the military veterinary schools bind themselves from the time of entering the schools to serve in the active army for six years at least (dating from the time of leaving the schools) if they have passed the leaving examinations and for three years at least if they have not passed these examinations Both classes immediately on leaving the school shall have two years of service with troops on the terms previously set forth in the article The first category then enter either the École d Application du Service de Santé Militaire as aides majors of the first class or the École d Application de Cavalerie as aides vétérinaires of the first class The second category if before the termination of their engagement they succeed in passing the examinations which admit to the rank of aide major or aide vétérinaire finish their two years of active service with troops under the conditions of Article 24 and then enter at Val de Grace or at Saumur as aides majors or aides veterinaires Similar regulations are applicable to the students of the Naval School of Médicine

Chair of Experimental Pathology

Professor Chantemesse having been at his own request transferred to the chair of hygiene, vacant through the death of Professor Proust the chair of experimental patho

The council of professors, 33 in

July 7th for the purpose of con-

ites Four names were submitted —namely those of M Achard M Netter, M Roger and M Widal At the first selection M Roger and M Widal each received 10 votes while 6 were given to M Netter and 7 to M Achard At the second selection M Roger received 17 votes and M Widal 13 votes M Roger has therefore obtained the first place He was interne in 1883, took the degree of M D in 1887, and became hospital physician (*médecin des hopitaux*) and *agrégé* in the Paris Faculty of Medicine in 1892 Although only 44 years of age he has already accomplished an extensive and varied amount of scientific work in addition to which he enjoys an unquestioned celebrity in the scientific world

July 11th

VIENNA

(FROM OUR OWN CORRESPONDENT)

Symptomatology of Urosepsis

IN a paper on Urosepsis read by Dr Ferdinand Kornfeld at a recent meeting of the Gesellschaft der Aerzte he said that the effects produced by urosepsis consisted partly of local symptoms connected with the uropoietic apparatus and partly of general symptoms due to urine poisons circulating in the blood In clinical work the latter conditions—i e, those of septic origin—were liable to receive more consideration than the local symptoms When the general septic phenomena predominated the diagnosis of cryptogenic septicæmia was not unlikely to be made In addition to abnormal states of the bladder the characteristic symptoms of urosepsis were (1) urine fever which might be isolated and acute, recurring, or chronic, (2) intestinal disturbances, and (3) phenomena of nervous origin In chronic urosepsis the disease followed a regular course without fever and was marked by serious impairment of the general health with debility and emaciation but without pronounced local symptoms Cases of isolated cachexia often belonged to this class The cachexia when severe might easily be mistaken for malignant internal disease especially for carcinoma of the intestine, if gastric intestinal symptoms happened to be present, such as gastric-dilatation, resistance in the pyloric region, deficiency of free hydrochloric acid presence of lactic acid, vomiting and intolerance of solid food In the circulatory and respiratory system urosepsis might cause cardiac arhythmia and irregularity without anatomical changes in the valves or myocardium, stases in the circulation, cyanosis, localised pneumonia, and localised atelectasis. In the skin it might cause indurations, infiltrations, phlegmonous ulcerations, erythema nodosum, and purpura hæmorrhagica. Hæmorrhages from the urinary tract were often brought about by the great fluctuations of pressure in the urinary and sanguineo-vascular system. Free intestinal hæmorrhage occurred occasionally. In addition to serious disorders of the central nervous system, hemicrania, tremors, and vertigo might be among the results of urosepsis. Cramps and paralytic seizures were relatively infrequent and only made their appearance in uræmia. In ten cases of symptomatic cachexia in which prostatectomy had been performed a long time previously Trousseau-Erb-Chvostek symptoms were observed. This form of tetany was to be referred to auto-intoxication from the urinary system. Another result of urosepsis was disordered action of the trophic nerves leading to bronzing of the skin, urticaria, abnormal distribution of perspiration, and detachment of the nails.

A New Hospital in Vienna.

On June 20th the foundation stone of a new hospital in Vienna was laid in presence of the Emperor. The old hospital, the celebrated Allgemeines Krankenhaus, was erected in the time of the Emperor Joseph II. and was the seat of a renowned medical school which was founded by Dutch physicians. In this hospital Rokitansky and Skoda worked and made their names famous but in course of time the buildings became out of date and no longer fulfilled the increasing requirements of modern times. The want of laboratories was felt to be a serious obstacle to carrying on scientific work and the accommodation for the patients was defective in several respects. In consequence of this the reputation of the Vienna medical school declined and no German professor accepted a call to Vienna. The desirability of building a modern hospital was suggested several years ago but the scheme has not been realised till now. The site is not far from the old hospital. A long time is certain to be required for the completion of the buildings; it is intended that the gynæcological clinic shall be erected first. The new physiological institute was opened not long ago. It has been built after Exner's plan and is well supplied with electrical apparatus and accessories of all kinds but unfortunately does not devote sufficient space to a very important branch of physiology—namely, physiological chemistry.

Post-graduate Courses.

Two series of post-graduate courses will be held during the summer in Vienna, one of them commencing on August 1st and the other on Sept. 1st. It is expected that many German and American visitors will attend. Any questions about these courses may be directed to the correspondent of THE LANCET.[1]

July 11th.

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[1] We will forward such questions to our correspondent.—ED. L.

WATER-SUPPLY OF TEIGNMOUTH.—At the meeting of the Teignmouth (Devon) urban district council held on July 5th it was decided to sign an agreement under which Teignmouth would receive a water-supply from the new waterworks of Paignton at Holme Moor. The chairman remarked that by this agreement Teignmouth would possess a pure and abundant water-supply.

ROYAL COLLEGE OF SURGEONS IN IRELAND.—The following prizes were awarded for the summer session 1904:—Barker anatomical prize (£31 10*s.*), C. Cooper. Mayne scholarship (£15), A. N. Crawford. Carmichael scholarship (£15), J. Prendiville. Gold and silver medals in operative surgery: gold, J. S. Dunne; silver, P. D. Sullivan and J. C. Murphy (equal). Stoney memorial gold medal in anatomy, J. Prendiville. Practical histology: H. C. Carden, first prize (£2) and medal; and D. Adams, second prize (£1) and certificate. Practical chemistry: R. H. F. Taaffe, first prize (£2) and medal; and F. C. Warren, second prize (£1) and certificate. Public health and forensic medicine: M. Cohen, first prize (£2) and medal; and T. H. Massey, second prize (£1) and certificate. Materia medica: F. C. Warren, first prize (£2) and medal; and J. B. Kelly, second prize (£1) and certificate. Biology: J. C. S. Day, first prize (£2) and medal; and T. C. Boyd and H. W. White (equal), second prize (£1) and certificate. The winter session will commence in October.

Obituary.

JOHN BIRKETT, F.R.C.S. ENG.

WITH the death of John Birkett, who had recently entered his ninetieth year, another link between the earlier and middle decades of the last century and the first years of the present has broken. Of the Members of the Royal College of Surgeons of England originally elected to the Fellowship he and his friend and former coadjutor, Sir John Simon, have been for some time past the last survivors. He gained that honour by no favouritism but from the position that he had made for himself amongst his compeers by hard work, careful observation, and strict attention to duty. He was a representative surgeon of the pre-Listerian period, carrying on with such improvements as his own acute observation suggested the principles and practice of surgery as it was taught by the great surgeons of the hospital of which he was for so many years a distinguished ornament. Relying on cleanliness and care and acknowledging the value of rest he appreciated because he had long perceived the value of simple treatment and it was easy for him to graft on his habitual methods the extreme attention to minute details which Lister was the first to inculcate and which has proved of such profound importance in the practice of surgery.

Mr. Birkett was born on April 14th, 1815, at 10, The Terrace, Upper Clapton, Middlesex, then occupied by Mr. Giberne. His father and mother lived in the City at 14, St. Mary Axe. He had the misfortune to lose his mother in infancy, she dying on the ninth day after his birth. His father immediately removed to 1, Lodiges-buildings, Hackney, a house adjoining large nursery gardens that were then well known. Here for five years he was carefully tended by two sisters of his father and was then sent to a school in Hackney kept by a Frenchman named Dumas, where he remained for five years. In the summer and autumn of 1825 he was at a school at Edmonton kept by a mathematician and astronomer, Dr. Firminger. From there he was sent to Mr. Elwell at Hammersmith, where he remained for three and a half years, and finally completed his school life at the establishment of the Rev. Charles Parr Burney who was a Greek scholar of repute. At this school he formed warm and lasting friendships with John Simon, John Ord, Stephen Rigaud (afterwards Bishop of Antigua), and Henry Arthur Herbert of Muckross, Ireland. Before leaving this school, where he remained for two and a half years from January, 1830, to June, 1832, he was bound apprentice in September, 1831, at the Royal College of Surgeons of England to Bransby Blake Cooper who was then surgeon at Guy's Hospital. He was one of the last, if not the very last, of the surgeons' apprentices who paid £500 for the privilege of attending the lectures and surgical practice of Guy's Hospital. He was entered as a student at that hospital on Oct. 1st, 1832, attended the introductory lecture, and was introduced to several of his teachers, amongst whom was Dr. Alfred Swaine Taylor, destined to become the most distinguished medical jurist and toxicologist in England, and who lived up to a comparatively recent date. On Oct. 6th, 1837, Birkett passed his examination as a Member of the College, being examined by Sir Astley Cooper, Sir Anthony Carlisle, and Mr. Guthrie, and at the same time became demonstrator of anatomy in the hospital, having as a colleague James P. Babington.

At Christmas, 1840, he rented 2, Broad-street Buildings and Dr. Babington having resigned Mr. Thomas Moody was associated with him as demonstrator of anatomy, their names appearing for the first time on the list of teachers at the hospital for the session 1841–42. On August 26th, 1844, in recognition of his position and abilities, he was elected Fellow of the Royal College of Surgeons of England by the Council. In 1845–46, Mr. Moody having resigned, he was joined by Alfred Poland, and this year undertook to give demonstrations of the anatomy of the tissues with the microscope, or, as it would be now termed, demonstrations in histology, marking very distinctly the period when the use of the microscope began. In 1847 he continued these demonstrations, resigning the demonstratorship of anatomy, and he was appointed to make the post-mortem examinations.

In May 1849 he was elected assistant surgeon to Guy's Hospital and in the same month and year was awarded the Jacksonian prize for an essay on Diseases of the Mammary Gland an extremely well written and suggestive work which besides the valuable money consideration of £300 established his position as an accurate clinician and brought him into relation with many leaders of the profession outside the walls of his own hospital In 1849, in order to be in closer proximity to the hospital, he migrated to Wellington street Southwark, on which side of the Thames also his practice was then chiefly situated In 1851 having previously relinquished the post of demonstrator of morbid anatomy he commenced the delivery of anatomical lectures with Mr Hilton After serving the hospital as assistant surgeon for the short period of four and a half years he was in September, 1853 elected to the much coveted position of surgeon to Guy's Hospital When Mr Bransby Cooper became incapacitated by serious indisposition from lecturing on surgery Mr Birkett delivered his lectures for him On the death of Bransby Cooper Mr Cock declined to lecture and the lectureship was offered to Mr Hilton who, however, preferred to deliver the lectures on anatomy It was then naturally offered to Mr Birkett who accepted the appointment and at a month's notice undertook the delivery of a course in conjunction with Mr Poland and was appointed in association with him one of the lecturers on surgery In 1856 his practice having increased he felt himself able to meet the expenses of a residence in the West end and took a house in Green street in which he lived for 40 years He continued to lecture on surgery and to perform the duties of surgeon at Guy's Hospital until April 1875 when having attained the age of 60 years, he retired in accordance with the rules of the hospital In the meanwhile, in 1867 he had been elected a member of the Council of the Royal College of Surgeons of England and retained that office until 1883 In 1869 he was appointed Hunterian professor of surgery and pathology at the College and in that and the following year lectured on the Nature and Treatment of New Growths He was elected a member of the court of examiners in 1872 and served in that office till 1882 He was an examiner in anatomy and physiology from 1875 to 1877, and examiner on the board of examiners in dental surgery from 1875 to 1882 He served as Vice President of the College for two years in 1875 and 1876 and in 1877 he became the President [illegible] in his profession [illegible] discharged the [illegible] Home Office [illegible] the anatomical schools in the provinces and that in the discharge of his duties in that capacity he gave entire satisfaction both to the officials at headquarters and to the teachers of anatomy in the several schools

Though not a voluminous writer Mr Birkett published several works which are still referred to by those interested in the special subjects with which they deal The essay which gained the Jacksonian prize to which reference has already been made was issued in 1850 as an octavo volume He had previously translated Alfred von Behr's 'Handbook of Human Anatomy, General Special and Topographical in 1847 A Description of some of the Tumours removed from the Breast and Preserved in the Museum of Guy's Hospital, London and Contributions to the Practical Surgery of New Growth, or Tumours, and Cysts were others of his works He was also for some time editor of the Guy's Hospital Reports He wrote the article on Hernia and that on Diseases of the Breast in Holmes's System of Surgery He was a founder of the Pathological Society of London of which he was a councillor in 1851 and a Vice President in 1860 62 At the Royal Medical and Chirurgical Society he was secretary during the years 1863–65 on the council in 1867 68 and treasurer from 1870–73 He took an active part in the discussions at these societies and made many communications to both of them which are to be found in their respective Transactions He was for many years one of the medical referees of the London Life Assurance while for 40 years he was a member of the Royal Institution attending the lectures with much assiduity, thus keeping himself *au courant* with modern research He took a warm interest in the affairs of the Worshipful Company of Ironmongers to which body he was affiliated in 1842 and after passing through subordinate offices became Master in 1871 He was again elected Master in 1892 and for some time before his death was the "Father of the Company He had the pleasure of seeing his son, Mr Percy Birkett, also fill the office of Master

Mr Birkett without any pretension to being a classic or a mathematician—he had been, as we have seen, at too many schools for this—was a man of wide and liberal education and was endowed with powers of keen observation and of impartial judgment He was not a professed botanist but was familiar with most of our wild flowers and knew the English orchids well whilst his long association with the Royal Botanic Society and the Regent's Park Gardens and his frequent visits to Kew made him acquainted with the names and origin of many exotics the structure of the flowers or leaves of which especially if of Alpine habitat, with lens in hand he would pore over for an hour or more, taking them home to study and to identify at leisure His habit of spending his holidays in wanderings on the continent especially in Switzerland, and of visiting the chief galleries of painting on the continent, together with his excellent memory and his intercourse with various artists, rendered him a good judge of pictures and added to the charm of his conversation and reminiscences of foreign cities Few men knew better how to use a map To form one that could be serviceable and easily consulted even if the walk were no longer than from Sevenoaks to Maidstone or from Midhurst to Haslemere he would make the starting point the centre by joining two or if need be, more ordnance survey maps Then after bevelling the edges that the junction might be almost invisible colouring the areas of equal height describing concentric circles increasing in diameter by two or more miles mounting on linen and constructing a case no whit inferior to that sold in the map sellers shops he was secure from losing his way in his peregrinations

The success attending his operations which was exceptional both in private and in hospital practice, was mainly due to the attention which he paid to the most minute particulars in the dressing of wounds and to the comfort of the patient In these respects he is said to have been rather a trial of temper to the numerous house surgeons who worked under him No slipshod bandaging was permitted Singularly neat and precise himself he could not endure irregularity want of consideration or incapacity in others and spent an inordinate though from the point of view of a teacher surely not wasted time in seeing that his directions for the comfort of the patient were carried out in the minutest detail His large knowledge of diseases of the female breast led him to be consulted frequently both by his colleagues in the hospital and by the public and he was held in high estimation not only for his opinion but for his operative skill His success would probably have been greater had he not been of a shy and reserved disposition with much of the stateliness and courtesy of the old school but totally lacking in the push and go which would have rendered conspicuous men of far less ability In full accordance with this it may be remarked that he rather prided himself in carrying on his practice when at its best without burdening himself with the expense of a carriage He used to maintain that many of the younger men of the present day were too luxurious and that unless they possessed private means it was far more economical and certainly more wholesome to walk than to drive to and from the hospital Many of the older surgeons and physicians of his earlier years never thought of driving or of being driven to their work Tall spare in figure, always neatly and well dressed and walking with head erect and elastic step, he supported his theory by his practice and enjoyed excellent health to the age of 80 or more

Of late years there were not wanting signs that the machinery of his body was wearing out In April 1902 he suffered from an embolism of his left femoral artery and shortly after lost the vision of his right eye for a few minutes from embolism or spasm of the retinal artery Perfect recovery took place from the latter condition but a relapse of shorter duration occurred on one if not two occasions Two months after the occlusion of the femoral artery pulsation in the dorsal artery of the left foot was imperceptible and the foot was cold His chief ailment was however calculus in the pelvis of the kidney on one or both sides which led him to lie in bed during the last two or three years of his life to prevent pain and hæmorrhage He bore his ailment very patiently, his strength failed he became unconscious and passed quietly away in the midst of his family, full of years and well-deserved honours

Mr. Birkett married in 1842 Lucy Matilda, the daughter of Halsey Jansen, and leaves four sons and a daughter.

WILLIAM ALEXANDER McKEOWN, M.D. R.U.I.

IT is with regret that we announce the death of the well-known Ulster ophthalmologist Dr. W. A. McKeown, which took place suddenly on July 9th from syncope at Newcastle, County Down, his summer residence. He belonged to a medical family, his father being the late Dr McKeown, a well-known medical practitioner of Ballyclare, County Antrim. When a young man he went to Belfast where he at first entered a solicitor's office and having acquired the art of writing shorthand he was for a time engaged in journalistic work. However, his tastes were in another direction and he entered Queen's College, Belfast, as a student of medicine in the session 1865-66. His career there was marked with the greatest distinction; he held a scholarship in his second and third years and a double scholarship (in anatomy and physiology and in therapeutics and pathology) in his fourth year. In 1869 he graduated as M.D. of the Queen's University, being at the same time a gold medallist and first of first honours. He subsequently studied in Dublin, Paris, and London, taking a special interest in ophthalmic work. Returning to Belfast he devoted himself to the eye, ear, and throat as his subjects. Through his exertions the late Mr. George Benn founded the Ulster Eye, Ear, and Throat Hospital in 1871 and in 1874 the new buildings were opened. His work at this hospital soon brought him into marked prominence in Belfast and the North of Ireland, where his name became a household word and his originality and brilliant work attracted attention among ophthalmic surgeons. His first original contribution was in reference to the introduction of the magnet for the removal of particles of iron or steel lodged in the interior of the eye, an accident of frequent occurrence in the numerous manufactories and shipyards in Belfast. Probably, however, it was in connexion with the treatment of cataract that his reputation was established and his name will live in connexion with his operative methods for removing immature cataracts. He was the author of a "Treatise on Unripe Cataract and its Successful Treatment by Operation, with Tables of 152 Cases." At the annual meeting of the British Medical Association in Belfast in 1884, when he was president of the section of ophthalmology, he demonstrated this method, and shortly before his death he had received and accepted an invitation from the ophthalmic surgeons of the Johns Hopkins Hospital at Baltimore to go to America and demonstrate his operation before a congress of American ophthalmic surgeons. His hospital was constantly visited by ophthalmic surgeons from all parts of the world to see his numerous original methods of operative work. He contributed papers to the Clinical Society, Ophthalmological Society, and the various medical journals. He was an ex-president of the Ulster Medical Society and of the Ulster branch of the British Medical Association, and to the meetings of both these medical societies he was constantly sending contributions. In 1896 he was appointed the first lecturer on ophthalmology in Queen's College, Belfast.

Dr. McKeown, while admittedly one of the first ophthalmologists of his time, did not limit his attention to the narrow groove of medical specialism. He was interested in all branches of education. He was elected by the graduates of the Queen's University one of their representatives on the Senate and when the step was taken of destroying that University and replacing it by the existing Royal University he was appointed an original Crown senator, and he constantly used his great influence to advance the interests of the Northern Medical School in Belfast. He entered very strongly into the recent discussions on Irish educational questions, being a very pronounced advocate of non-sectarian education and however much some might differ from him in opinion all acknowledged his great ability, fearless honesty, and intense earnestness. His work in directing attention to the insanitary condition of the primary national schools was of the greatest importance.

Dr. McKeown was a man of great force of character, straightforward, honest, a hater of shams and of all unreality. He was a born fighter, utterly fearless, and if he was in a minority this made no difference—it simply stimulated him to fight the harder. As a result of his great controversial powers and his merciless exposure of all humbug he was both feared and respected. He leaves a widow and one child (a daughter) to deplore his death which took place at the age of 60 years. He was buried in the Belfast city cemetery on July 11th.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Ladislaus Niemilowicz, professor of medical chemistry in the University of Lemberg, at the age of 41 years.—Dr. Victor Cnyrim of Frankfort, whose name is well known in connexion with various questions of hygiene and of medical politics.—Dr. L. de Reynier of Neuenburg, who is described as the Nestor of Swiss medical men, at the age of 95 years.—Dr. Le Roy des Barres, surgeon of the St. Denis Hospital, Paris.—Dr. Joao Pizarro Gabizo, professor of dermatology in the University of Rio de Janeiro.—The *Sviet* announces the death of the Russian Court accoucheur, Ivan Fedorovitsch Maslovski, a scientific gynæcologist, an experienced operator and consulting physician at the Maximilianovski Infirmary, and an active member of the Gynæcological Society.

Medical News.

SOCIETY OF APOTHECARIES OF LONDON.—At the primary examination held recently the following candidates passed in the subjects indicated:—

PART I.

Royal Free Hospital; and B. R. Shillitoe,

sco-Owen, Cardiff; and G. F. C. Harvey, London Hospital.

Materia Medica and Pharmacy.—F. M. Cunningham, Royal Free Hospital; C. J. Evans, St. Bartholomew's Hospital; and C. S. Spencer, Manchester.

PART II.

Anatomy.—A. E. Blythman, Charing Cross Hospital; R. B. Dawson, Guy's Hospital; W. P. Pinder, Leeds; S. K. Poole, Guy's Hospital; W. E. N. Smith, Durham, and C. J. Wolfe, Edinburgh.

Physiology.—A. E. Blythman, Charing Cross Hospital; R. B. Dawson, Guy's Hospital; R. J. W. McKane, Leeds; C. J. Wolfe, Edinburgh; and R. P. Wylde, Manchester.

UNIVERSITY OF BIRMINGHAM.—The following is a list of the successful candidates in the Faculty of Medicine:—

I. *Degree of Doctor of Medicine.*—(*a*) Official: John Douglas Stanley (*b*) Under Ordinary Regulations: Jordan Lloyd.

II. *Degree of Master of Surgery.*—Official: John Thomas Hewetson and Thomas Wilson.

III. *Degrees of Bachelor of Medicine and Bachelor of Surgery.*—(*a*) Associate: Alex. Wathen Nuthall. (*b*) Past students of Birmingham Medical School: Tom William Beazeley, Charles York Flewitt, Sidney Cameron Lawrence, and William Arthur Loxton. (*c*) Under Ordinary Regulations: Alfred Ernest Remmett Weaver (scholarship), William Cook, Cuthbert Keay Gettings, and Leonard George Joseph Mackey.

IV. *Fourth Examination for the Degrees of M.B., Ch.B.*—Class I.: Norman John Launcelot Rollason (scholarship). Class II.: Robert Wallace Aitken, Reginald Hudson Astbury, Edward Lancelot Bunting, Fred Thomas Hollway Davies, Helen Gertrude Greener, Leonard , William Cuthbert Houghto Ravenhill, Herbert Henry W

V. *Third Examination for the Degrees of M.B., Ch.B.*—Class I.: Frederick Wilkinson (scholarship). Class II.: Robert Wallace Aitken, Reginald Staines Austin, Edward Lancelot Bunting, Davies, Helen Gertrude Greener, Leonard Chattock Hayes, Arthur Cecil Hincks, William Claude Horton, William Cuthbert Houghton, Harold Bruce Jones, Thomas Holmes Ravenhill, Walter Rowland Southall Roberts, Norman John Launcelot Rollason, Spencer Graham Walker, and Herbert Henry Warren.

VI. *Second Examination for the Degrees of M.B., Ch.B.*—Class II.: John Dale (scholarship), James Fenton, Nevill Coghill Penrose, and David Priestley Smith.

VII. *First Examination for the Degrees of M.B., Ch.B.*—Class II.: John Adams, Charlotte Bailey, Harold Gordon Browning, John Selwyn Edwards, George Henry Chavasse Mold, George Bassett Moon, Arthur McLean Pickup, John Lichtenstein Ritchie, Herbert Henry Sampson, Harold Cairns Terry, Ethel Annie Waldron, and Edward Vernon Whitby.

VIII. *Degree of Bachelor of Dental Surgery.*—Henry Percy Pickerill.

IX. *Diploma in Public Health.*—Parts I. and II.: Thomas Dawson.

CONJOINT EXAMINATIONS IN IRELAND BY THE ROYAL COLLEGE OF PHYSICIANS AND THE ROYAL COLLEGE OF SURGEONS.—The following candidates have passed the first professional examination:—

Honours.—T. C. Boyd, T. P. Cormack, J. C. E. Day, C. Hyland, G. Patton, W. G. Ridgway, A. Sheridan, and H. W. White.
In all Subjects.—G. E. Beggs, G. Collins, J. J. Cuskelly, G. A. Finegan, J. A. J. Flannery, M. J. Hawkshaw, F. N. Holden, D. J. Hurley, H. W. Kay, W. J. P. Lillis, D. J. Lyne, T. J. Lyons, J. McHugh, J. T. McKee, P. Maguire, J. P. Morgan, T. N. Neale, E. Ryan, M. J. Saunders, H. B. Sherlock, J. M. Smyth, C. H. Stringer, and W. C. Townsend.
Completed Examination.—S. W. Hudson and T. J. McDonnell.

FOREIGN UNIVERSITY INTELLIGENCE.—*Lyons:* Dr. Ance[illegible] of Anatomy, Dr. Nev[illegible] Natural History, Dr. [illegible] Chemistry, and Dr. [illegible] —*Montpellier:* Dr. E. O. Gyrnfelt has been appointed *professeur agrégé* of Anatomy and Dr. Gagnière *professeur agrégé* of Physics.—*Nancy:* Dr. Laborde has been appointed *professeur agrégé* of Chemistry, Dr. Weber *professeur agrégé* of Anatomy, and Dr. Mathieu *professeur agrégé* of Physiology.—*Paris:* Dr. Branca has been appointed *professeur agrégé* of Anatomy and Dr. Maillard *professeur agrégé* of Chemistry.—*Toulouse:* Dr. Dieulafé ha[illegible] of Anatomy and Dr. Aloy [illegible] *Tubingen:* Professor Erns[illegible] appointed Director of th[illegible] Dr. Krehl who goes to [illegible] recognised as *privat-docen*[illegible] *Vienna:* Dr. Anton Bumm, editor of the *Wiener Medicinische Presse*, has been recognised as *privat-docent* of Surgery and Dr. Josef Sorgo as *privat-docent* of Internal Medicine. Dr. August Ritter Vogl v. Fernheim, Professor of Pharmacognosis, is about to retire.

COUNTY OF DURHAM MEDICAL UNION.—The sixth annual meeting of this union was held at the Town Hall, Durham, on June 28th. There was a large attendance of members from the districts of Chester-le-Street, Wingate, West Hartlepool, Durham, South Shields, South Moor, Sunderland, Stanley, Darlington, Crawcrook, Ryton, Willington, Evenwood, Easington, Birtley, West Auckland, Whickham, Low Fell, Washington, Sherburn, Ryhope, Wrekenton, &c In the absence of the President, Dr. E. Jepson (Durham), Mr. W. Galloway (Wrekenton) was voted to the chair. Dr. Jepson was again re-elected president and Dr. J. Murphy (Sunderland) was re-elected vice-president. The council for the ensuing year was also elected. Messrs. Graham and Shepherd (Sunderland) were re-elected secretaries and solicitors. Votes of condolence were passed to the relatives of the late Dr. C. F. G. Mann (Washington) and Mr. A. W. Attwater (Whickham) who had both been active members of the union. The report of the council for the past year was read and was considered to be very satisfactory. The secretaries of the various local committees and others made verbal reports as to the position of union matters in their respective districts which were also of a satisfactory nature. The question of the National Deposit Friendly Society was again considered and it was resolved, on the motion of Mr. R. Stuart (Durham), seconded by Dr. Johnson (South Moor),

> [illegible] ere rigidly to the resolution [illegible] and Northumberland Unions [illegible] *Friendly Society* in any way [illegible] members to sign the certifi-[illegible]

Dr. Jepson, Dr. Murphy, Dr. J. H. Hunter, and Dr. R. S. Hubbersty were re-elected as the representatives of the union on the judicial committee of the Durham and Northumberland Unions. A discussion afterwards took place in reference to applications from certain miners' lodges for a reduction of the fortnightly subscription and after the matter had been most carefully considered it was unanimously resolved, on the motion of Dr. J. H. Hunter (South Shields), seconded by Mr. E. H. Davis (West Hartlepool),

> That this meeting sees no reason to alter the determination of the union previously arrived at that the sum of 9*d.* per fortnight is the least fortnightly subscription that can be accepted for colliery or family club contract practice.

A hearty vote of thanks to Mr. Galloway for presiding and to Dr. Jepson for his presidency during the year brought to a close a most successful meeting.

TRINITY COLLEGE, DUBLIN.—The following awards were made in Trinity term:—Surgical travelling prize: John S. Joly. FitzPatrick scholarship: James G. Wallis. Medical scholarships: in anatomy and institutes of medicine, Thomas O. Graham (Trinity College) and Francis O'B. Ellison (Stewart); in physics, chemistry, botany, and zoology, Allman J. Powell (Trinity College) and George F. Graham (Stewart). Purser medal: Francis R. Coppinger.

AN OPHTHALMIC INFIRMARY FOR KASAN.—The Kasan local council is taking steps to establish a central ophthalmic hospital to deal with the exceptional number of cases of diseases of the eye occurring in the district and found chiefly amongst the foreign settlers.

DONATIONS AND BEQUESTS.—Mr. and Mrs. John Dyer of Swansea have given a sum of £2000 towards the endowment of the Devon and Dorset Ward of the Swansea General and Eye Hospital.—The Royal Westminster Ophthalmic Hospital has received, under the will of the late Miss Steel, a legacy of £1000.

LONGEVITY.—Mrs. Hannah Coleman of Cleeve, Yatton, Somersetshire, celebrated her 103rd birthday on Feb. 22nd.—Mr. Joseph May, who took the diplomas of M.R.C.S. Eng. and L.S.A. in 1830 and died at Devonport on April 10th, had seen the four Napoleons. The first he saw on board the *Bellerophon* in Plymouth Sound in 1815, the second at Vienna, and the third and fourth—i.e., Napoleon III. and the Prince Imperial—at Mount Edgcumbe Park.

THE LATE MR. A. K. CROSSFIELD.—Mr. Arthur Kyffin Crossfield died at his residence, Newcomen Lodge, Dartmouth, Devon, on July 5th, after a few days' illness from appendicitis. The deceased, who was in his fifty-second year, was the eldest son of the late Mr. R. Crossfield of Douglas, Isle of Man. He received his medical education in Edinburgh and took the qualifications of L.R.C.P., L.R.C.S., L.M. Edin. in 1878. After holding a resident appointment at the Isle of Man General Hospital Mr. Crossfield commenced practice at Dartmouth. He took great interest in the volunteer movement, was surgeon-lieutenant-colonel in the 2nd Devon Royal Garrison Artillery Volunteers, and was shortly to have received the volunteer long service medal. Mr. Crossfield was a justice of the peace for the borough of Clifton-Dartmouth-Hardness, and at the Dartmouth police-court on July 6th a vote of condolence with his widow and family was passed unanimously.

UNITED HOSPITALS ATHLETICS.—At Stamford-bridge, London, the thirty-eighth annual athletic meeting of the United Hospitals took place on July 9th, when the holders of the challenge shield (St. Bartholomew's Hospital) were beaten by London Hospital, whose representatives, counting ten points for a win and three points for a second, compiled a total of 49 points to 46 by the holders, while Guy's Hospital took third place with 45 points. St. Bartholomew's Hospital was successful in putting the weight, in the mile race, in the three mile race, and in the 100 yards race. The London Hospital was successful in the 220 yards, in the long jump, in the 120 yards hurdles, and in the half-mile race. Guy's Hospital was successful in the high jump, in throwing the hammer, and in the quarter-mile race.

Parliamentary Intelligence.

HOUSE OF COMMONS.

WEDNESDAY, JULY 6TH.

Police Fees for Medical Services.

Mr. ROBERT AMBROSE asked the Home Secretary whether his attention had been called to complaints made by medical practitioners within the metropolitan area of the inadequacy of the fees paid by the police for medical services and the difficulty and expense incurred before obtaining those fees and, if so, whether, in view of the time involved in these police calls, which were generally cases of injury or poisoning, he could arrange that the fees should be increased and should be paid on demand at the local police [illegible] DOUGLAS [illegible] stand that [illegible] regard to [illegible] rvices and [illegible]

Report of Army Medical Department.

Mr. CHARLES HOBHOUSE asked the Secretary of State for War what was the cost of preparing the annual report of the Army Medical Department; at what date the report was generally presented; what was the cause of the delay in its presentation to Parliament; and whether it would be possible to expedite it in future.—Mr. ARNOLD-FORSTER answered: The cost of the printing and paper of the Army Medical Department report falls upon the Stationery Office Votes. It naturally depends on the size of the report but I have ascertained that the cost of the report recently published may be taken as about £180. The report is generally presented 18 months after the year to which the returns refer. It was explained to the honourable Member last year, in reply to a question, that many of the returns do not reach this country till the late autumn owing to the labour of compilation and that a considerable period is required for the elaboration of the report from these returns. I am afraid, therefore, that it is not practicable to expedite its publication.

THURSDAY, JULY 7TH.

Outdoor Medical Relief.

Sir WALTER FOSTER asked the President of the Local Government Board whether he would take steps to have a report made by the inspector now investigating the arrangements for outdoor medical relief in the metropolis on the number of unions, if any, in which medical relief was granted on loan in the first instance, and on the practice of requiring applicants for medical relief to attend before the board or a committee, with a statement of how long such practice had been in force and its effects on the number of applications.—Mr. LONG said: I will take steps to give effect to this suggestion as far as may be practicable.

Purity of Food.

Sir CUTHBERT QUILTER asked the President of the Local Government Board whether, in pursuance of its powers, the Board proposed to take action on the lines recommended by the Royal Commission on Arsenical Poisoning in Part VIIIA. of its report, by the appointment of a special expert officer or otherwise for securing better control over the purity of chemically prepared, preserved, or other foods liable to contain deleterious substances; and whether progress had been made in giving effect to the further recommendation of the Royal Commission that the principle of officially prescribed food standards already enforced in the case of certain articles of diet should be applied to other foods and beverages.—Mr. LONG replied: I have not at present decided to appoint a special expert officer of the kind referred to. The consideration of the recommendations of the Royal Commission is being proceeded with, and in connexion with it the proposal with regard to the appointment of such an officer will receive attention. Effect, however, could not be given to the recommendations as to food standards without legislation.

THE SELECT COMMITTEE ON THE REGISTRATION OF NURSES.

The Select Committee of the House of Commons appointed to consider the expediency of providing for the registration of nurses has now commenced its sittings under the chairmanship of Mr. H. J. TENNANT. On Thursday, July 7th,

Dr. BEDFORD FENWICK gave evidence. He pointed out that at present there was no uniformity in the training of nurses and that the public had no means of discriminating between the good and bad, efficient and inefficient. Unless a nurse possessed technical knowledge she was unable to carry out efficiently the duties intrusted to her by the medical man and she was unable to report to the medical man what particular symptoms the patient had shown during his absence. A large number of those who were following the profession of nursing were unable to take the pulse and temperature properly. He would not have separate classes of medical, surgical, and obstetric nurses; every nurse should, in his opinion, have a general knowledge of these three branches and she might afterwards specialise on that basis. There [illegible] o were engaged in nursing in the Unite[illegible] that at least 40,000 had not had any ad[illegible] lered it essential that Parliament should p[illegible] uniform training and to prevent the great danger that now existed from the want of control. He did not think that there was any fear of opposition from the nurses to examination and registration because these would raise the status of nursing.

When the Committee met on Tuesday, July 12th, the evidence of Miss Isla Stewart and Miss Margaret Huxley was heard. Miss STEWART said that she was matron of St. Bartholomew's Hospital. At present no uniformity existed in the training of nurses, each hospital having its own standard and length of training. There ought to be a certain number of years fixed and there ought also to be an examination to prove that the nurse had benefited by her training. There was a difference in the methods of St. Bartholomew's Hospital as compared with St. Thomas's Hospital. Some system of registration such as that [illegible] uced into the House of Commons [illegible] uniformity which she desired to see [illegible] ncil should be set up [illegible] The council should [illegible] of medical men and nurses but she saw no [illegible] g represented. There might be difficulties in [illegible] the cancelling of certificates for offences, but those could be overcome. Probationers were at present examined in the making of splints, making beds, their knowledge of mixing lotions for standard bottles, their knowledge of instruments, and bandaging. They were also examined in hot and cold applications, the making of poultices, the application of steam, hypodermic injections, keeping charts, and so on. She did not see why it should not be possible to obtain uniformity of examination. The attendance on the sick must be more or less the same in any hospital.

The CHAIRMAN: You would not be content with certificates from certain hospitals being approved by a central council?

Miss STEWART: I think it would be very difficult to draw the line as to what hospitals you would include. I would prefer to have the examinations carried out by one class of people.

Sir JOHN BATTY TUKE: How could such a body as that arrive at a conclusion as to what is the more important part of a nurse's qualities—her moral aptitude for the work?

Miss STEWART: That would be a question for the hospital at which she is trained.

The CHAIRMAN: What advantage would be gained from examination by a central board as against certification by the great hospitals?

Miss STEWART: I think it would prove whether all the hospitals were training their nurses sufficiently and efficiently. It would be possible, she continued, to devise examinations sufficiently varied from time to time so as to test proficiency. Elementary physiology would be one subject. Questioned by Sir JOHN BATTY TUKE, she added that this would include the bones, the position of the viscera, the main arteries, the alimentary canal, digestion, and a general elementary knowledge of the functions. A nurse ought not to work in a hospital less than three years. If she were two years in an eye and throat hospital, for instance, she ought at least to have served one year in a general hospital. Her desire was not to make examinations more severe than they were at present in the good hospitals. Probationers usually commenced at the age of 23 years but in a few hospitals they [illegible] 's the limit of age was now 35 ye[illegible] not be a limit for the granting o[illegible] t ago to be young. The public ran the risk of getting an improperly trained nurse very frequently owing to the want of uniformity. Examination by a central board would allow the public to ascertain whether they were getting fully trained nurses. It would also be an advantage to the fully trained nurse if a distinction were drawn between her and the partially qualified nurse who competed with her. The ideal they were aiming at was that there should be set up a general council with power to examine and to certify but that that should in no way interfere with the existing training that went on in the great hospitals. In answering further questions she said she believed that the employment of incompetent nurses prevailed to a very great extent.

Miss HUXLEY said that she was formerly matron of Sir Patrick Dun's Hospital, Dublin. She thoroughly agreed with the previous witness as to the necessity for uniformity in training and examination. In Sir Patrick Dun's Hospital it was the custom to bind a probationer for four years. Two years were spent in the wards and during that time the nurse received education in anatomy, physiology, hygiene, invalid cookery, and the ordinary nursing of the wards. At the end of two years she was required to go out private nursing and earned a certain amount of money for the hospital. On more than one occasion when a nurse wished to join the army nurses she had been told that she was ineligible because she had not worked three years in the hospital. She mentioned this as showing that great disappointment was caused through want of uniform practice. If a general council were to lay down the length and term of training and the form of education all nurses would have a fair start, one not being better off than another simply because she happened to be in a particular place. Want of uniformity caused great injustice. She supported generally the evidence given by Miss Stewart.

The Committee afterwards adjourned.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

AUBIN, EMILE DUPONT, M.R.C.S., L.R.C.P. Lond., has been appointed Port Health Officer for the Port of Thames, N.Z.

BARTLETT, R. C., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory Act for the Romsey District of the County of Hants.

BUSHNELL, F. G., M.D. Lond., D.P.H. Cantab., has been appointed Pathologist to the Sussex County Hospital.

COLLINS, WILLIAM EDWARD, M.B. Lond., M.R.C.S., has been appointed a Member of the Senate of the New Zealand University.

HAY, JOSEPH FRANK STRONG, M.B., C.M. Aberd., has been appointed an Inspector of Lunatic Asylums, Hospitals, and Licensed Houses in the Colony of New Zealand.

JOHNSTON, HENRY M., B.A., M.B., has been appointed Chief Demonstrator of Anatomy in Trinity College, Dublin.

MENZIES, PERCY WILLIAM, L.R.C.P., L.R.C.S. Edin., has been appointed Public Vaccinator for Ohaeawai, N.Z.

PORTER, ALBERT HARDING, L.R.C.S., L.R.C.P. Edin., has been appointed Public Vaccinator for Waihi, N.Z.

REED, WALTER HUGO, M.R.C.S. Eng., L.S.A. Lond., has been re-appointed Medical Officer of Health for the Westbury (Wiltshire) Rural District Council.

SYMONS, WILLIAM HENRY, M.D. Brux., L.R.C.P. Lond., M.R.C.S., L.S.A., D.P.H. Oxon and Durh., has been re-appointed Medical Officer of Health for Bath.

TAYLOR, GERARD C., M.D. Cantab., D.P.H., has been appointed Medical Officer of Health of the Urban District of Finchley.

WALKER, H. J., M.B., M.S. Edin., has been appointed Certifying Surgeon under the Factory Act for the Brighton District of the County of Sussex.

ZIMPEL, ADOLPH, M.B., Ch.M. Aberd., has been appointed Public Vaccinator for Ormondville and Norsewood, N.Z.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

AYR DISTRICT ASYLUM.—Assistant Medical Officer, unmarried. Salary £120, with board, apartments, attendance, and washing.

BETHLEM HOSPITAL.—Two Resident House Physicians (unmarried). Honorarium at rate of £25 each per quarter, with board and residence.

BIRKENHEAD BOROUGH HOSPITAL.—Junior Resident House Surgeon. Salary £80 and fees.

BRIGHTON THROAT AND EAR HOSPITAL, Church-street, Queen's-road.—Non-Resident House Surgeon for six months, renewable. Salary at rate of £75 per annum.

CARLISLE NON-PROVIDENT DISPENSARY.—Resident Medical Officer. Salary £150, with apartments, attendance, &c.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—Two House Physicians for six months. Salary at rate of £30 per annum, with board and residence.

DORCHESTER, DORSET COUNTY HOSPITAL.—House Surgeon, unmarried. Salary £100, with board and residence.

DUMFRIES AND GALLOWAY ROYAL INFIRMARY.—House Surgeon. *Salary £50 per annum, with board and washing.*

[illegible] road, S.W.—[illegible] or £40 for 12 [illegible]

GREAT NORTHERN CENTRAL HOSPITAL, Holloway.—Junior House Surgeon. Salary at rate of £30 per annum, with board, lodging, and washing. Also Pathologist. Salary 50 guineas per annum.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, London, W.C.—House Physician, also House Surgeon, both for six months, and unmarried. Salary in each case £20, with board and residence. Also Surgeon Dentist.

LIVERPOOL, TOXTETH PARK WORKHOUSE AND INFIRMARY.—Resident Medical Officer. Salary £100 per annum, with board, washing, and apartments.

[illegible] OF THE HEART, *Soho-square, W.*—[illegible]

[illegible] SANATORIUM, Mansfield.—Resident [illegible] er annum, with board, lodging, and washing.

ST. THOMAS'S HOSPITAL.—Casualty Officer for six months. Salary at rate of £100 per annum, with board and residence.

SOUTH UIST PARISH.—Medical Officer and Public Vaccinator. Salary £77 10s.

STIRLING DISTRICT ASYLUM, Larbert, N.B.—Assistant Medical Officer. Salary £150, with board, &c.

STOCKPORT INFIRMARY.—House Surgeon. Salary £100 per annum, with board, washing, and residence.

VICTORIA UNIVERSITY OF MANCHESTER.—Junior Demonstrator in Physiology.

WEST BROMWICH DISTRICT HOSPITAL.—Resident Junior House Surgeon. Salary £50 per annum, with board, lodging, washing, and attendance.

WEST SUSSEX, COMBINED SANITARY DISTRICT.—Medical Officer of Health. Salary £650 per annum.

WALLINGFORD BERKSHIRE ASYLUM.—Second Assistant Medical Officer, unmarried. Salary £140, rising to £160, with board, apartments, attendance, &c.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—House Surgeon. Salary £100 per annum, with board, lodging, and washing.

WORCESTER GENERAL INFIRMARY.—House Surgeon. Salary £80 per annum, with board and residence.

Births, Marriages, and Deaths.

BIRTHS.

DIXON.—On July 12th, at Lynwood, Haven Green, Ealing, the wife of R. Halstead Dixon, M.B. Lond., M.R.C.S., L.R.C.P., of twin daughters.

WILLIAMSON.—On July 9th, the wife of Charles F. Williamson, M.R.C.S.E., L.R.C.P. Lond., L.S.A. Lond., of a son.

MARRIAGES.

ELLIOTT—DOWNING.—On July 9th, at St. Stephen's Church, Lewisham, Arthur Forbes Elliott, M.B., B.C. Cantab., to Mable Katharine, only daughter of Arthur Matthew Weld Downing, F.R.S.

[illegible] Worthing.

DEATHS

[illegible] Harold E. [illegible] East Africa [illegible] ann, C.B., [illegible] Boscombe, aged 39.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

THE ANATOMIST'S HYMN.

WE feel pleasure in congratulating Dr. Donald MacAlister on his graceful German version of the "Anatomist's Hymn" by Oliver Wendell Holmes. The original English and the German translation are published in the June number of the *Eagle*, the magazine of St. John's College, Cambridge, from which we quote three stanzas (the *second, the third, and the last) in both languages, with the permission* of the editor.—

* * * * *

"The smooth soft air with pulse-like waves
[illegible]
While all their burden of decay
The ebbing current steals away,
And red with Nature's flame they start
From the warm fountains of the heart.

[illegible]
Leaps forth to fill the woven net,
Which in unnumbered crossing tides
The flood of burning life divides;
Then kindling each decaying part
Creeps back to find the throbbing heart.

* * * * *

"O Father! grant Thy love divine
To make these mystic temples Thine!
[illegible]
And mould it into heavenly forms!"

"Sacht und gelinde die Luft, in wechselwogenden Zügen,
Leise murmelnd durchrinnt heimliche Höhlen der Brust;
Dabei hellen sich auf die purpurfarbenen Ströme,
Reger rauschen sie hin, glühen zu reinerem Rot;
Ebbet ihr Lauf wieder ab, so tragt er unmerklich von dannen
Alles, was hemmt und beschwert, alles Verfallene weg.
Rosig, wie innig erwarmt am Herde selber des Lebens,
Heiss, aus des Herzens Born, quellen sie nochmals hervor.

[illegible]
Endlich, wenn er gelabt die erschlafften verfallenen Teile,
Heimwarts schleicht er, und sucht wieder das schlagende Herz.

* * * * * * *

[illegible]

The elegiac distich employed in the translation is quite unlike the metre of the original. In German this metre is abundantly used, [illegible] is to be ill-adapted for [illegible] expressed in the follow- [illegible]

"In the hexameter rises the fountain's silvery column,
In the pentameter aye falling in melody back."

Otherwise—

"Im Hexameter steigt des Springquells flüssige Säule,
Im Pentameter dann fällt sie melodisch herab."

Dr. MacAlister many years ago gave the medical profession a proof of his familiarity with the German language when he made his excellent translation of *Ziegler's* Pathology. But to translate a manual, however technical the subject and elaborate the treatment, requires a different form of literary skill than that which is demanded for the accurate rendering of imaginative and beautiful verse into a foreign tongue. Of all languages German is, perhaps, the one that the foreigner thinks that he will find simplest to write correctly because of the many hard-and-fast rules of construction and arrangement, but the successful rendering of English into German is not often accomplished by our countrymen. We congratulate Dr. MacAlister upon his elegant feat.

TREATMENT OF PUBLIC WATER-SUPPLIES WITH COPPER SULPHATE.

THE *Engineer* of July 8th states that the United States Department of Agriculture is experimenting with a process of treating public water-supply with a solution of copper sulphate—1 part in 1,000,000 parts. The purpose of this is to destroy certain forms of algæ or plant growths which so frequently render water foul and ill-smelling; although the sanitary quality of the water is not affected the appearance, smell, and taste are such as to cause great complaint from consumers. These growths flourish best in the purest waters passed through sand filters and for this reason large storage of filtered water is not advisable unless the reservoirs are to be covered over. As to the effect upon the consumers, a person drinking three pints of water per day, with 1 part to 1,000,000 parts, would in a year have consumed only seven to eight grains of the sulphate. As a matter of fact, however, the treatment would not be continuous; two or three applications a year would probably suffice and besides this the sulphate would enter into combination with the organic life and be thus precipitated. Certain of the algæ are killed by solutions of only 1 part in 3,000,000 parts but it is possible that others will require much stronger solutions. In this case, which remains to be determined by test, the reservoir may be shut off from use during treatment or there may be a supplementary process to precipitate any copper sulphate remaining in solution.

MOTOR BICYCLES FOR MEDICAL MEN.

Beginner writes: "Will any medical man who has used a motor bicycle during winter months for professional work kindly advise if such is trustworthy in a hilly country district when the roads are heavy and the weather is rough, if it is possible to dispense entirely with a horse under such conditions, and how, if so, to keep clean and dry when visiting better-class patients?"

THE EYRE TESTIMONIAL FUND.

THE following subscriptions to the above fund have been received. *Contributions may be sent to Dr. J. H. Bryant, Guy's Hospital, S.E.*

	£	s.	d.		£	s.	d.
Sir Thomas Stevenson...	3	3	0	Mr. J. H. Busteed... ...	1	1	0
Dr. L. E. Shaw	3	3	0	Dr. E. W. Goodall ...	1	1	0
Dr. W. Hale White ...	3	3	0	Dr. G. Danford Thomas	1	1	0
Mr. R. Clement Lucas...	3	3	0	Dr. F. G. Hopkins ...	1	1	0
Mr. W. *Arbuthnot Lane*	3	3	0	*Mr. R. Wynne Rouw* ...	1	1	0
Mr. C. H. Golding-Bird	3	3	0	Mr. M. F. Hopson ...	1	1	0
Mr. W. A. Brailey... ...	3	3	0	Mr. Kenneth M. Scott	1	1	0
Dr. W. Bligh	2	2	0	Dr. Leonard Ll. B. Williams	1	1	0
Dr. *C. Price-Jones* ...	2	2	0				
Dr. J. W. F. Jewell ...	2	2	0	Mr. G. Bellingham Smith	1	1	0
Dr. J. H. Bryant... ...	2	2	0				
Mr. L. A. Dunn	2	2	0	Mr. H. G. Simpson ...	1	1	0
Mr. J. H. Parfitt	2	2	0	Mr. J. Howell	1	1	0
Mr. G. T. S. Sichel ...	2	2	0	Mr. H. W. Kiallmark ...	1	1	0
Mr. W. H. A. Jacobson...	2	2	0	Major J. V. Salvage, R.A.M.C.	1	1	0
Mr. E. W. H. Shenton...	2	2	0				
A Sympathiser	2	2	0	Dr. F. Meadows Turner	1	1	0
Mr. C. J. Symonds ...	2	2	0	Mr. C. M. Simpson ...	1	1	0
Mr. G. Rowell	2	2	0	Mr. L. H. McGavin ...	1	1	0
Mr. J. R. Boswell... ...	2	2	0	Mr. F. G. M. Philps ...	1	1	0
Mr. C. Spurrell	2	2	0	Dr. E. A. Peters	1	1	0
Mr. Ernest Clarke	2	2	0	Dr. G. H. Graham ...	1	1	0
Mr. C. Higgens	2	0	0	Mr. H. W. Beach	1	1	0
Sir Cooper Perry	1	1	0	Mr. E. E. Henderson ...	1	1	0
Mr. W. A. Maggs	1	1	0	Dr. Amand J. M. Routh	1	1	0
Mr. C. H. Fagge	1	1	0	Mr. C. E Hibbard	1	1	0
Dr. J. Wade	1	1	0	Mr. Leonard S. Dudgeon	1	1	0
Mr. J. H. Badcock ...	1	1	0	Mr. S. E. Denyer, C.M.G.	1	1	0
Mr. J. C. S. Peatson ...	1	1	0				
Mr. *J. L. Payne*	1	1	0	*Professor R. Howden* ...	1	1	0
Mr. C. S. Morris	1	1	0	Dr. A. Newsholme ...	1	1	0
Dr. R. E. Delbruck ...	1	1	0	Dr. H. S. French	0	10	6
Mr. A. W. Ormond ...	1	1	0	Dr. J. Pickett	0	10	6
Mr. J. C. V. Wilkins ...	1	1	0	Dr. H. Barber	0	10	6
Dr. A. M. Daldy	1	1	0	Dr. A. J. Cleveland ...	0	10	6
Dr. M. Craig	1	1	0	Mr. A. Allport	0	10	6
Dr. T. G. Stevens... ...	1	1	0	Mr. A. R. F. Evershed	0	10	6
Dr. H. Cooper	1	1	0	Mr. E. E. B. Landon ...	0	10	6

COFFEE-LEAF CIGARETTES.

To the Editors of THE LANCET.

SIRS,—*Can any of your readers tell me the name of a coffee-leaf* cigarette which, when smoked, causes a dislike to tobacco cigarettes, and where they can be obtained?

I am, Sirs, yours faithfully,
CASTLETON.

July 11th, 1904.

POST-GRADUATE COURSES.

OUR correspondent should consult the Students' Number of THE LANCET (Sept. 5th, 1903), p. 729, for particulars regarding post-graduate instruction which is given throughout the year at various hospitals.

THE INHABITED HOUSE DUTY REPEAL ASSOCIATION.

WE have received a visit from a representative of the committee of this association who has pointed out that a paragraph which appeared in THE LANCET of July 2nd might leave the impression upon our readers that the association was some sort of bogus or fraudulent affair. We did not intend to convey this impression, although we must confess we were not so well aware of the work of the association as we might have been considering the service that it has been to medical men. It may be remembered that the association obtained the assessment of consulting rooms used by medical men who resided elsewhere as business premises.

PICTURE POSTCARDS AND CHARITY.

THE *Daily Express* of July 7th contains the following interesting paragraph relating to this subject:—

> *One would have thought that the possibilities of the pictorial postcard had been exhausted. There is no question about its popularity, for hundreds of thousands of specimens are bought* weekly in this country alone. But the editor *of Pearson's Weekly* has discovered a new use for them and has set them to charitable purposes. First of all a collection was made of all those cards on which appeared the photographs of well-known men and women, and these celebrities were then written to asking if they would kindly sign a few which might be sold in aid of the Fresh Air Fund. The response was surprising. Hardly a refusal came to hand. The result is that *Pearson's Weekly* announces in to-day's issue a list of autograph postcards which is quite novel. Among those who have signed postcards are the following: the Duke of Norfolk, Right Hon. A. J. Balfour, Right Hon. Joseph Chamberlain, Madame Melba, Rudyard Kipling, Sir A. Conan Doyle.

Here follow the names of 34 other distinguished persons who have likewise signed postcards. We congratulate the editor of *Pearson's Weekly* on his ingenious application of the picture postcard. We believe, however, that in the employment of these postcards for charitable purposes the Assistance Publique in Paris led the way, as announced in THE LANCET of Feb. 6th last, p. 402, subsequently to the appearance of a letter in THE LANCET of Dec. 12th, 1903, p. 1699, in which a scheme to benefit hospitals through the sale of picture postcards was outlined.

CHILD-STUDY.

To the Editors of THE LANCET.

SIRS,—In reply to your correspondent "Child-Study" in THE LANCET of July 2nd may I recommend to him the following books? Most of the literature on child-study is American. (1) Physical Nature of the Child, by Rowe; (2) Fundamentals of Child-Study, by Kirkpatrick; (3) The Study of Children, by Dr. Francis Warner (all published by Macmillan and Co.); (4) The Child, in Dent's Temple Primers; (5) The Child, by A. F. Chamberlin in Contemporary Science Series (Walter Scott); and (6) The Medical Inspection of School Children, by Leslie Mackenzie (Bell and Bradfute, Edinburgh).

I am, Sirs, yours faithfully,
W. H. COUPLAND.

Royal Albert Asylum, Lancaster, July 7th, 1904.

Beta.—There are no absolute rules. The medical officer of health should in every possible instance, to quote the words of the Local Government Board, "act in harmony with the medical attendants of the sick so as to obtain from them the valuable assistance which they can afford to him in his work." Circumstances may occur in which the medical officer of health feels it his duty to order disinfection of a patient or his immediate removal to an isolation hospital or the disinfection of premises; in such a case the medical officer of health should inform the medical practitioner of his action as soon as possible. The points raised by our correspondent and many others of a like nature were fully discussed in a series of articles entitled "Difficulties under the Infectious Diseases Notification Act," published in THE LANCET of 1895, which can be obtained in pamphlet form, price 6*d.* (by post 6½*d.*), on application to the publisher.

Lac.—The report of the Departmental Committee on Food Preservatives was issued in November, 1901, and although that is nearly three years *ago absolutely nothing has been done and* this country is still without the necessary statutory powers to control the practice of preserving foods. Briefly, the committee recommended that the use of any preservative or colouring matter whatever in milk should be counted an offence under the Sale of Food and Drugs Acts. In cream 0·25 per cent. of boric acid was suggested as permissible and in butter 0·5 per cent. Formaldehyde was forbidden altogether and salicylic acid was not to be used in greater proportion than one grain per pint of liquid food or one grain per pound of solid food.

R. S.—It is difficult to give a detailed answer on the information supplied. Many cases of eczema do [illegible] with reference to the case of the ch [illegible] *unsuitable for pulmonary cases* [illegible]. Our correspondent had better send a [illegible] of his cases to one of the local practitioners who would doubtless supply him with the information which he seeks.

R. G. J.—1. The student must either be content with the double qualification, M.R.C.S., L.R.C.P., or attend at the University as required. 2. There are so many pocket diaries of the kind required by our correspondent that we cannot undertake to make distinctions between them. 3. There are no such books, so far as we know; the facts of anatomy can only be learned and remembered by dint of steady application and dissection.

G. W., Birmingham.—On the information before us we consider that the consultant should have refused to act with Dr. B. without previously informing our correspondent. A patient has a perfect right to change his medical attendant, but the newly called in practitioner should insist upon the former attendant being informed of the change and this Dr. B. apparently failed to do.

R. H.—(1) We have no information; and (2) the best form of a "draft" balance-sheet we have seen is that given in Affleck's "Guide to the Income Tax Law and Practice," which was reproduced in THE LANCET of July 4th, 1896. This number of THE LANCET is now out of print, but the book (price 5*s.*) can probably be still obtained from the publisher, 72, Market-street, Manchester.

Monitor.—Radam's microbe killer, according to an analysis which we made a few years ago, consisted of a weak solution in water of sulphurous acid gas with traces of sulphuric acid.

Mr. J. W. Draper.—We cannot answer our correspondent's question for the reply must depend upon the regulations of the particular medical school which he may select.

Medical Diary for the ensuing Week.

P.M.), London
.).
1.30 P.M.), St.
Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), West-

Thomas's
3 P.M.), St

St. Mark's
den-square

P.M.), St.
.), Charing
St. Mary's
P.M.), Gt.
), London
), Throat,
oho square

Middlesex
9.15 A.M.),
(10 P.M.),

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (18th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. E. Dore: Clinique. (Skin.)

ST. PETER'S HOSPITAL (Henrietta-street, Covent Garden).—3.30 P.M. Mr. R. Harrison: Cases in the Wards.

TUESDAY (19th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. J. E. Squire: Clinique. (Medical.)

WEDNESDAY (20th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. J. Smith: Clinique. (Surgical.)

THURSDAY (21st).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. Hutchinson: Clinique. (Surgical.)

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (7, Fitzroy-square, W.).—5 P.M. Dr. H. Scharlieb: The Administration of Anæsthetics in Affections of the Respiratory System.

Gt. Ormond-street, W.C.).—

COLLEGE (Tottenham Hos-
rville. On Anæsthetic Diffi-

Covent Garden).—3.30 P.M.
of the Urethra and Bladder

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private informa-
d addresses of

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index to Vol. I. of 1904, which was completed with the issue of June 25th, and the Title-page to the Volume, were given in THE LANCET of July 2nd.

VOLUMES AND CASES.

VOLUMES for the first half of the year 1904 are now ready. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

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METEOROLOGICAL READINGS.

(*Taken daily at 8.30 a.m. by Steward's Instruments.*)

THE LANCET Office, July 14th, 1904.

Date	Barometer reduced to Sea Level and 32° F.	Direction of Wind	Rain fall	Solar Radia in Vacuo	Maximum Temp Shade	Min. Temp	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
July 8	30·20	S.W.	...	120	81	61	61	65	Hazy
" 9	30·23	E.	..	124	84	62	63	69	Fine
" 10	30·21	E.	.	126	81	61	62	68	Fine
" 11	30·12	S.E.	.	124	78	59	63	68	Fine
" 12	30·00	S.E.		122	78	59	62	70	Fine
" 13	30·13	W.	0·02	127	79	60	62	68	Fine
" 14	30·10	S.W.	..	126	77	62	61	70	Cloudy

During the week marked copies of the following newspapers have been received:—*The Star, Hertfordshire Mercury, Windsor and Eton Express, Standard, South Wales Daily News, Walsall Advertiser, Surrey Advertiser, Coventry Herald, Birmingham Daily Mail, Reading Mercury, Mining Journal, Local Government Chronicle, Liverpool Courier, Westminster Gazette, Pall Mall Gazette, Daily News, Irish Times, Nottingham Guardian, Aberdeen Free Press (Weekly),* &c.

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Presidential Address

ON

THE GROWTH AND DEVELOPMENT OF THE OXFORD MEDICAL SCHOOL.

Delivered at the Seventy-second Annual Meeting of the British Medical Association held at Oxford on July 26th, 1904,

BY WILLIAM COLLIER, M.D. CANTAB., F.R.C.P. LOND.,

PHYSICIAN TO THE RADCLIFFE INFIRMARY, OXFORD; LITCHFIELD LECTURER IN MEDICINE AT THE UNIVERSITY OF OXFORD; AND PRESIDENT OF THE ASSOCIATION.

[Dr. Collier commenced his address by reviewing the causes which led at the early part of the nineteenth century to the neglect of medicine at the Universities of Oxford and Cambridge, and particularising the steps which were taken towards the re-establishment of medicine at the former seat of learning. He proceeded :—]

In November, 1882, Professor John S. Burdon Sanderson was appointed to the newly founded chair of human physiology and histology at Oxford, a first step towards the promotion of medical education in Oxford on modern lines. Having elected a professor of physiology, it was found necessary to build him laboratories and class-rooms for the purpose of teaching, and on June 5th, 1883, the members of Convocation were asked to grant a sum of £10,000 for this purpose. The resolution met with keen opposition, partly on the ground that vivisection would be practised and partly on the ground that the expenses were beyond the existing resources of the University. The resolution was carried by the small majority of three votes. On Feb. 5th, 1884, a decree was submitted to Convocation to empower the curators of the University Chest to raise a sum not exceeding £10,000 to defray the cost of the erection of a laboratory and class-rooms for the professor of physiology. A circular had been sent round to those believed to be opposed to vivisection, and only to those, calling upon them to show by their votes their determination not to permit experimental researches in Oxford. There spoke in favour of the resolution Dr. Liddell, the then Dean of Christ Church, and the late Sir Henry Acland, and against it the late Professor Freeman and the present Bodleian Librarian; placets, 188; non-placets, 149; and so the decree was carried. Having built the laboratories and lecture-rooms for the professor of physiology, it was found necessary to ask for an annual sum of £500 for three years to defray the cost of heating, lighting, water-supply, the salary of a demonstrator of histology, and other incidental expenses. The question of vivisection was mooted but a majority of 168 in a house of 656 decided against "the anti-physiological party," as they were called. In the same year, 1885, the Faculty of Medicine, which had been merged in natural science, was recreated, and Mr. Arthur Thomson, senior demonstrator in anatomy in the University of Edinburgh, was elected lecturer in anatomy. It needed a man of resolution and fixed purpose to cope with the situation, for when he took up his work in Oxford Mr. Thomson found himself with three students and a small wooden shed in which to teach anatomy—a great contrast to his Edinburgh experience. A sum of money was immediately collected by members of the University interested in the development of the school and a small temporary lecture room and a dissecting room were built. In the following year the curators of the University Chest built, at a cost of £500, a temporary iron-roofed building with rather more accommodation. By 1891 the lecturer's class had grown from three to 67. A sum of £7000 was now asked and obtained from the University to provide a permanent home for the teaching of human anatomy and the present excellent building, in which the Section of Anatomy will be held, was built. In a year or two, largely owing to the success of Mr. Thomson as a teacher, the lectureship was converted into a professorship.

In 1886 a most important statute was passed by which students in natural science were exempted from the first public examination in classics known as Moderations. This measure enabled students of medicine after passing their preliminary examination known as Responsions, which might be passed before coming into residence, to devote their first year in Oxford to the study of the preliminary subjects in natural science, and so another and most important barrier to the establishment of a medical school disappeared.

In 1891 Sir Henry Acland, who had always interested himself in the study of pathology and bacteriology, inaugurated a new department in bacteriology and appointed, first, Dr. Menge of Munich to take charge of it and later, in turn, Dr. Bertram Hunt and Dr. J. Ritchie. In 1895 Sir Henry Acland retired from the Regius professorship and Sir John Burdon Sanderson was appointed to succeed him, Professor F. Gotch, professor of physiology in the University of Liverpool and formerly lecturer in physiology at this University, taking Sir John Burdon Sanderson's chair. In 1896 the new Regius professor, in an open letter to the President of Magdalen, pointed out that the time had come when Oxford medical students should have the advantage of two new departments —pathology and pharmacology—both well within the scope to which Oxford had restricted itself in the building up of the medical school, and in the following year William John Smith Jerome was appointed lecturer in pharmacology and materia medica.

In May, 1898, in spite of the impoverished condition of the University Chest, Convocation passed without dissent a decree empowering the University to spend £7500 in erecting new laboratories and lecture rooms for the joint use of the professors of botany and comparative anatomy, Sir William Anson showing that this expenditure was rendered necessary by the increase in the number of medical students. In 1899 a generous medical student, Mr. Ewan R. Frazer, offered the University a sum of £5000 towards the expenses of building a pathological laboratory. This sum was accepted, the University at the same time agreeing to supplement it with another £5000, and to make an annual grant of £250 for upkeep. Two years later, in October, 1901, the new pathological laboratory was opened, and at the opening ceremony Dr. Ritchie, reader in pathology, pointed out that, in addition to giving those who were seeking degrees the opportunities of acquiring the necessary knowledge in pathology, it was the desire of the University to provide opportunities for those who wished after graduation to return to Oxford to prosecute researches in pathology and bacteriology, and to this end there had been provided a special room for experimental pathology. In view of the fact that much of the pathological work of the future must be in the direction of the chemical examination of the products of disease processes, a chemical research laboratory had also been provided.

Already the importance of our new pathological laboratory has been recognised, as a generous donor, Mr. Philip F. Walker, has quite recently endowed a studentship of the [illegible] must devote him- [illegible] ho can doubt that [illegible] tion of much good work, as we all know that many a man eagerly anxious and in every way fitted to carry on investigations of the utmost importance to mankind is prevented from doing so by want of means.

I must not omit to mention that in 1901 the Drapers' Company presented to the University the magnificent medical library which you will find in close proximity to the museum buildings and which will ever remain as a memento of their generosity. In 1902 Mrs. Ogilvie gave to the University a sum of £7000 for the purpose of creating a readership in ophthalmology, to be held by the senior surgeon to the Oxford Eye Hospital, and this readership is now held by the president of the section of ophthalmology, Mr. R. W. Doyne, to whose untiring efforts for many years past we largely owe the excellent eye hospital which now exists in this city.

THE PRESENT STATE OF THE OXFORD MEDICAL SCHOOL.

[illegible] be properly taught. You will find that for many years past adequate provision and suitable accommodation and apparatus have been provided for the teaching of these subjects and that at the present moment they are being taught by professors, readers, and lecturers whose ability and fitness for their important duties cannot be questioned. The Association desired that provision should be made for the elementary teaching of clinical medicine and surgery. In 1883 the existing *Litchfield clinical professorship was split up* into a Litchfield clinical lectureship in medicine and one in surgery and from that date to the present students are taught in the wards of the Radcliffe Infirmary the bare outlines of clinical diagnosis in medicine and surgery and are thus fitted to take immediate advantage of the most advanced teaching and the excellent clinical material they find *awaiting them at the large metropolitan hospitals. Yet it* would appear from the questions so often asked that little is known by the general public of these important changes which have been carried out here during the past quarter *of a century. Less than six years ago* a member of our Association, living not much more than 50 miles from this city, was reported to have used these words in an address he was giving at the opening of a medical school in the West of England, "Oxford still misapplies its medical endowments and declines to reorganise its medical faculty." And again, in the same address, "You must go to either Oxford or Cambridge, where *the demon of athletics reigns* supreme and where professional studies are depreciated if not despised." Had he taken the trouble to inquire he would not have so glaringly displayed his ignorance, for he would have found that medical students at Oxford and Cambridge were as keen and as steady workers as any in the country and that every possible facility and encouragement was being given them for the proper carrying on of their work. A further study of a list of prizes gained and important professional posts held during the last few years by past Oxford and Cambridge students would have proved to him that the time spent at these Universities was not wasted.

[Here Dr. Collier enumerated the makers of the Oxford revival as a medical centre, dwelling at some length on the parts played by Acland, Buckland, Charles Daubeny (professor of chemistry and botany), P. B. Duncan (keeper of the Ashmolean Museum), Robert Walker (reader in experimental philosophy), the fourteenth Earl of Derby (chancellor), Burdon Sanderson, Gotch, and Thomson, and such leading figures in general educational development as the late Dean Liddell and the late Dr. Jowett. He continued:—]

THE INFLUENCE OF THE SCHOOL.

Now let us ask ourselves whether the advantages claimed more than a quarter of a century ago as likely to accrue by associating the Universities of Oxford and Cambridge with medical teaching have in any way been achieved. For some years ago a considerable number of medical graduates have been passing forth into the larger world after spending three or more of the most impressionable years of their lives at one or other of the two Universities. Have they benefited? I cannot for one moment doubt that the majority of these graduates if appealed to would declare with no uncertain voice that they recognised fully that their mixing with men of their own age, who were *taking up other subjects* for their life-work and interesting themselves in other mental pursuits, had done much to widen their own general culture and to develop in them interests outside their own professional work. *Has the University benefited?* I think so. The establishment of the medical school on a modern basis has introduced into the University a body of students starting their university career with a definite object in view and compelled by the very nature of the case to lead a steady, strenuous life, for no student can hope to pass his professional examinations without a due amount of steady work. But to my mind *the greatest advantage to be* noted has been the influence the university student has had on the other medical students of our great metropolitan schools. All of us are familar with the Bob Sawyer type of medical student as depicted by Charles Dickens—*that is to* say, we are familiar with him in fiction—but I rather fancy as a living type he has for many years ceased to exist. Many of us can remember the time when any more than usually disgraceful outbreak of rowdyism in London was invariably attributed, rightly or wrongly, to medical students. But this is a matter of the past. The medical student of a quarter of a century ago undoubtedly bore a very bad character in the eyes of the public; he no longer does so. Why the change? I should attribute it, I believe with truth, largely to the influence of the university graduates who have come among them. These university graduates are older men and have long passed their first experience of freedom from school discipline; have more settled purpose in life, have a clearer and better idea of what is so difficult to define but so easy to recognise—*good and bad form. It is these older students* who, in recent years, have largely dominated the standard of life at our London schools, and their influence has been all for good. Lastly, let me point out that if the standard of general culture is distinctly raised by all the advantages of a university education, as we believe it is, then as the numbers of those participating in this education are increased *the status of the medical profession is certain to be raised.* There are some, I know, who do not wish to see a large *medical school at Oxford. They argue* that the standard should be a high one and only men of quite exceptional ability should be encouraged to seek the Oxford D.M. degree. Surely this is a somewhat selfish and exclusive policy. Everyone would agree that the standard should be high. Some, and I trust most of us, would wish that it should not be too high for the man of average ability with the capacity for work well developed. To such men every encouragement should be given to participate in all the *advantages to be gained by a few years'* experience of university life.

EARLIER BENEFACTORS.

I pass now from Oxford of to-day to Oxford of the past and will recall the names of a few of our greatest men, members of our own profession, who have been associated with the University.

I first mention Linacre, who at the age of 24, in 1484, was elected a Fellow of All Souls and was incorporated a D.M. of the University on his Padua degree. While at Oxford he seems to have devoted most of his time to giving lectures in physic and to the teaching of Greek. Not only was he a profound scholar and a successful physician, but he was also a member of the clerical profession—indeed, the last few years of his life were entirely devoted to clerical work. His wealth was very largely acquired by his numerous ecclesiastical preferments. He bequeathed considerable sums of money to both Oxford and Cambridge for the purpose of encouraging the teachers of medicine, but, unfortunately, owing to the imprudent management by his trustees a good deal of this money was lost. We still have the Linacre Professorship of Comparative Anatomy to remind us of one of our oldest and most distinguished benefactors. It was *mainly due to Linacre's efforts that* the Royal College of Physicians of London was founded in 1518, he being elected the first President. It was probably due to his influence, too, that a statute was passed in Henry VIII.'s reign that no person should practise as a physician or surgeon unless examined and approved by the bishop of the diocese in which he lived, who was to call to his assistance expert persons in the Faculty. This privilege of the bishops continued for a very long period.

For some years Harvey, the discoverer of the circulation of the blood, dwelt at Oxford, where he worked at anatomy and made many dissections. He was incorporated a D.M. of the University and in 1645 by royal mandate was made Warden of Merton College but did not retain the post long, as the following year, after the surrender of the city to the Parliamentarians, he returned to London. It was while *Harvey was at Oxford that another great anatomist* who studied under Harvey was preparing himself for future fame —Thomas Willis, well known to all of us by his description of the anatomy of the brain and more particularly by the circle of Willis. Willis was born of Oxfordshire parents within a few miles of our city and for many years practised his profession in a house opposite Merton College. Associated *with Willis was Christopher* Wren, the architect of St Paul's Cathedral. Born in 1632, Wren left school at the age of 14, and was engaged by Sir Charles Scarburgh to act as his assistant and demonstrator at his lectures on anatomy at Surgeons' Hall, London. Three years later, at the age of 17, he was entered as a fellow-commoner at Wadham, at 21 was made a fellow of All Souls, and at 28 Savilian Professor *of Astronomy. It* was while at All Souls that he made elaborate drawings to illustrate Dr. Willis's work on the anatomy of the brain. In 1679 he made experiments which led him to the invention of a method for the transfusion *of blood from one animal to another.* It was at the age of about 30 he began *to follow* the profession *of* architecture and one of his first works was this Sheldonian Theatre, the first stone of which was laid in 1664 and completed five years later. At the age of nine he was capable of writing an elegant Latin letter to his father but it was science and mathematicians that attracted him. A splendid mathematician, a great experimentalist, always working out the most difficult *scientific problems, a distinguished* astronomer, and a famous architect all combined in one [illegible]

[illegible] years. It was about this period that the Royal Society sprang into existence; largely, as is asserted, by the influence and coöperation of Oxford men. About 1648 Willis, Seth Ward, Robert Boyle, and other members of the University distinguished in theology and science were accustomed to meet in the rooms of Dr. Wilkins the warden of Wadham, [illegible] ority [illegible] ndon [illegible] who [illegible] years he became an undergraduate of University College, ten years later he took his B.M. degree and his D.M. at the age of 32 years. For nine years he practised as a physician in Oxford and we are told that he incurred the anger of the older practitioners in the town because he paid so little regard to professional conventionalities. In 1684 he moved to London and his apothecary tells us that he had scarcely been in town a year before he was earning more than 20 guineas a day. His lively conversation, it was said, soon made him the most popular physician in London. We are told that he succeeded more by his ready wit than his learning, for while at Oxford his library consisted of some phials, a skeleton, and a herbal. In 1692 he lost some £5000 owing to the capture by the French of a ship in which he was interested. When his friends condoled with him he replied that it did not matter, for he had only to go up 250 pairs of stairs to make himself whole again. If this be true the physicians' fees in those days would seem to have been very much higher than at present. At any rate, we can admire his philosophical way of putting up with a financial loss—a little more work will put me right again. If it be true that his witty tongue helped him to succeed in his profession it is also certain that it lost him many influential patients. Early in his London career he gave great offence to the Princess Anne by neglecting to visit her when sent for and by saying that her illness was nothing but [illegible] e should give the [illegible] Later he greatly [illegible] His Majesty, after [illegible] that he would not have the King's two legs for his three kingdoms, a remark so free that the King never saw him again. A few months before his own death he fell into great disgrace because when summoned to attend Queen Anne in her last illness he delayed his visit and was said to have replied that as he understood Her Majesty's case was desperate it would be best to let Her Majesty die as easily as possible. This sounds rather brutal but it was said in reference to the Queen's well-known great antipathy to him and Radcliffe urged that he feared his presence would do more harm than good. In 1695 the King offered him a baronetcy which was declined. We are told that though rough in manner and fond of flattery he was generous to those in need, a good friend, and a munificent patron of learning. He died in 1714 and lies buried in St. Mary's, our University church. Although he was given an almost royal [illegible] the pavement his coffin was discovered, not even a slab marking the spot where he was buried. A simple engraved slab now marks the spot near the north entrance. During his life he gave largely to his old college and to several charities and at his death he left [illegible] to the Masters and Fellows of [illegible] to be held in trust for the found[illegible]ling Fellowships, the overplus being paid for the purpose of buying perpetual advowsons for the college. In addition he left £5000 for the enlargement of the college and £40,000 for the building of a medical library. With money derived from his estates two other buildings were erected in this city by his trustees, the Radcliffe Infirmary and the Radcliffe Astronomical Observatory, and money was further granted towards the building of the Royal College of Phy[illegible] cliffe-square, completed in [illegible] ious buildings in this city [illegible] all of you. It was in this [illegible] Oxford was held in 1835, on your third anniversary. In it you will find a very pleasing portrait of Radcliffe painted by his friend, the King's painter Kneller. I cannot refrain from recording a passage of wit between these good friends. They lived in adjoining houses and for the sake of convenience Kneller had allowed Radcliffe to make a doorway in his garden wall; in course of time this doorway became a source of great annoyance to Kneller, as Radcliffe's servant frequently used it to gain entrance to his garden and to pick the flowers. At last, in a fit of anger, Kneller wrote to Radcliffe, and told him that if he could not control his servants he should be obliged to take the door away and to brick the aperture up. Radcliffe at once sent his servant to Kneller to tell him that he might do what he pleased with the door so long as he did not paint it. Kneller having received the message was equal to the occasion and at once replied, "Go tell Dr. Radcliffe with my services to him that I can take anything from him but physic." Fortunately for Oxford Radcliffe was not happy in his love affairs, for we are told that after passing many years for a misogynist, the result of an early disappointment, he again in his old age fell in love with the daughter of a wealthy citizen, but the match was eventually broken off—a very short time before the appointed wedding day; had it not been we might well have lost our library, our infirmary, and our observatory.

Thomas Sydenham (1624–89), who has always been regarded as one of the chief masters of English medicine, was also connected with the University. His career at Oxford was certainly a chequered one. At the age of 18 years he entered as a fellow commoner at Magdalen; a few months later he joined the Parliamentary forces and fought against the Royalists; four years later, in 1646, when Oxford and the other royal garrisons surrendered, he resigned his commission and was on his way to Oxford when he chanced to meet with Dr. Thomas Coxe who was attending his brother and who persuaded him to take up medicine. He then joined Wadham College and the following year was elected to a fellowship at All Souls. In 1648 he obtained his degree of B.M. in a very irregular manner as he was created B.M. by command of the then Chancellor of the University without having taken a degree in Arts and with little knowledge of medicine. For a time he studied at Oxford under the Regius professor of medicine, whose lectures, we are told, consisted merely in reading the ancient medical classics. Again he joined the army and became a captain of a troop of Parliamentary Horse. On one occasion he was left on the field of battle among the dead and lost, as he tells us, a great deal of blood. On another occasion he nearly lost his life at the hands of a drunken soldier who broke into his bedroom at night and discharged a pistol at his breast. Fortunately the soldier's left hand was interposed and was shattered by the bullet, while Sydenham escaped unhurt. Having again retired from the army he studied medicine at Montpellier and a year or two later began practice in London. In 1676, at the age of 52 years, he incorporated as M.B. at Pembroke College, Cambridge, on his Oxford degree and immediately took the M.D. of that University. It is supposed that there were political reasons for his not taking the Oxford degree. By his methods of studying disease and by his masterly description of diseases Sydenham is admitted to have made an epoch in medical science. In 1894 a life-sized statue of Sydenham was presented to the University museum by Sir Henry Acland and others.

Time will not permit me to mention others who attained [illegible] the [illegible] presidents whose names are recorded, 21 were graduates of the University of Oxford. There are, however, one or two other benefactors whose names I must mention, such as Dr. Mathew Lee of Christ Church, who, after practising some years in Oxford, went to London, became a Fellow of the College and in turn Censor and Harveian Orator; was for some years physician to Frederick Prince of Wales and died [illegible] d in trust [illegible] purpose [illegible] y. Lord [illegible] for the foundation [illegible] ociation with [illegible] he provided [illegible] to visit [illegible] was to [illegible] provided [illegible] was to forfeit a year's stipend to the infirmary and to pay £5 to that institution for each lecture omitted. I am much [illegible] that this most wise stipulation was never really enf[illegible] [illegible] converted into a lectu[illegible] [illegible] Dr. George Aldrich, by his will dated 1803, left a sum of money for the endowment of a professorship of the practice of medicine, which professor[illegible] the very inadequate stipend of the [illegible]

[Dr. Collier then briefly pointed out that the future effi[illegible] [illegible] ies, and concluded by [illegible]

THE PREVIOUS MEETINGS OF THE ASSOCIATION IN OXFORD.

[illegible] Association was founded at Worcester [illegible] arles) [illegible] pro[illegible] [illegible] ted a [illegible] the Association held its first [illegible] presidency of Dr. Kidd; the Council [illegible] arranged all the details of the meeting, which was attended by 300 members. The chief meeting was held in the Radcliffe Camera, the dome-shaped building to which I have alluded, and one or two incidents connected with this meeting are worth recalling. The address in medicine was delivered by Dr. Pritchard and the University conferred on him the degree of M.D. Although this same Dr. Pritchard had studied in Oxford he had been unable to take his degree because he was a Dissenter. The conferment of the degree in this way was taken at the time as a proof that a more liberal spirit was beginning to exist in the University. The Regius professor pointed out tha[illegible] not be procured by any ordinary medi[illegible] than 11 years' classical servitude and [illegible] words, classical servitude, as they imply that even in those days some students did not take kindly to the classics. The chief attraction of the meeting was the public performance of lithotrity by Mr. Costello before a very crowded audience [illegible] anatomy not being sufficiently [illegible] will notice that at that time [illegible] have been thought an unsuitable place for a surgical operation. It was remarked at the time that not a single [illegible] medicine attended to support the Regius [illegible]

Th[illegible] the Association at Oxford, which now [illegible] ers, was held in July, 1852. Dr. Ogle, the Regius professor, was the President, and the meetings, which extended over two days, were held in the House of Convocation. On this occasion the honorary degree of D.C.L. was conferred on three members—Sir Charles Hastings (the founder), Dr. John Forbes of London, and Dr. John Conolly of Hanwell. In the evening of the first day the Association was entertained in the Radcliffe Camera by Dr. Acland.

Another 16 years passed and in 1868 the Association visited Oxford for a third time. It had now grown to a total membership of 3672, of which some 500 attended the meeting. Dr. Acland, the Regius professor, presided, the general meetings being held in the Hall of Christ Church, while the sectional meetings, of which there were five, were held in the University Museum. Among the sectional secretaries on that [illegible] name of W. S. Church, M.A., B.M., n[illegible] e Royal College of Physicians of London, who gives the Address in Medicine to-morrow evening. I am glad to add that the three local secretaries, Dr. E. B. Gray, Dr. H. M. Tuckwell, and Mr. Edward Chapman, now a Member of Parliament, are all living. The [illegible] ferred on the following me[illegible] Rev. Samuel Haughton, M.D., Dr. W. Gull, Mr. James Paget, Mr. John Simon, and Mr. James Syme.

To-day our Association numbers over 19,000 members and we are expecting more than three times the number who visited Oxford in 1868. More than this—and it is, I think, a matter for hearty congratulation—the influence of our Associatio[illegible] branches have been [illegible] ll of our colonies. [illegible] sociation in magnit[illegible] to the fostering [illegible] workers. Into our [illegible] ance and [illegible] unwise and [illegible] way to [illegible] usefulness.

Address in Medicine

ON

"OUR SANITARY NEEDS, WITH SPECIAL REFERENCE TO THE NATIONAL HEALTH."

Delivered at the Annual Meeting of the British Medical Association at Oxford, on July 27th, 1904,

BY SIR WILLIAM SELBY CHURCH, BART., K.C.B., M.D. OXON.,

PRESIDENT OF THE ROYAL COLLEGE OF PHYSICIANS OF LONDON; CONSULTING PHYSICIAN TO ST. BARTHOLOMEW'S HOSPITAL.

MR. PRESIDENT AND GENTLEMEN,—I feel very deeply the honour which your Council has conferred on me in requesting me to give the Address in Medicine at this meeting of the Association and feel still more deeply the difficulty of the task—a difficulty which arises not only from my own incompetency but also from the vastness and complexity of the subject.

MEDICINE IN 1868.

Medicine having for its object the mental and bodily health of mankind is closely interconnected with the varying circumstances that bear on the conditions under which we live. The prosperity of the nation, the conditions under which the labours of the population are carried on, the state of commerce and of the arts and sciences, all react on the health of the people and nothing which concerns the life of the nation is foreign to the subject. Every advancement in science and its application to the arts has a bearing on medicine. To pure science it is directly indebted for means by which the various organs of the body can be examined, the presence of disease demonstrated, the changes in our bodies accompanying disordered health recognised; and perhaps more important than all, the exact methods of science point out the way in which the more complex questions presented in living bodies should be studied. It would occupy too much time, even if I were competent for the task, to trace a portion of the benefits which the exact sciences have conferred on clinical medicine during the years that have passed since the Association last met in this university city, a meeting at which addresses which still stand out as memorable among the numbers which have been given on similar occasions were delivered by Acland, Rolleston, and Gull, who will for many years yet to come be remembered not only as ornaments of our profession but as having done much to promote medical and scientific knowledge—leaders to whom we can still [illegible] manner in which the different [illegible] hould be approached.

The me[illegible] in 1868 is for another reason of [illegible] as marking the date of [illegible] at period our conceptions [illegible] he body had not undergo[illegible] views held by the origi[illegible] ater, Baillie, Carswell, and of [illegible] nfective processes leading to [illegible] may be said to have been at that time non-existent. The symptoms and course [illegible] which t[illegible] out but [illegible] true nature of the [illegible] progressive, for I find [illegible] matter in the writers on physic.[illegible]

It was in the year preceding the Oxford meeting that

[illegible] Organum, book iv, chapter ii.

ment of compound [illegible] the preceding three [illegible] infectivity of tuberculous matter began generally to be recognised; 20 years before Klencke[4] had produced tuberculosis of the lungs and liver in [illegible] human tubercle, but he did not [illegible] his experiments attracted little [illegible] Villemin's work in 1861[5] and the account of his numerous and careful experiments published in 1868,[6] that attention was again drawn to the subject. Villemin's work was carried on by Sir J. Burdon Sanderson,[7] late Regius [illegible]fessor of medicine in this University, who explored [illegible] erculous pro[illegible] ny years ha[illegible] the presenc[illegible] tuberculous degenerations was essential element.

THE GROWTH OF BACTERIOLOGY.

I have thought it desirable to remind you thus very briefly of the position in which medical knowledge stood in 1868 before drawing your attention to some of the remarks made by Sir William Gull in his address on Clinical Observation in Relation to Medicine in Modern Times, which he treated with the breadth of view and felicity of generalisation which was characteristic of his mind and teaching. It was the adaptation of Pasteur's work and discoveries to medicine and Koch's demonstration of the bacillus of tubercle in 1882 which led to the revolution which has taken place in our conceptions of the nature and cause of many forms of disease. Whilst I have no intention of attempting to review the changes that the last 35 years have witnessed it may be nevertheless instructive, as well as interesting, to turn to some of the passages in Sir William Gull's address and mark how great is the gulf which separates the medicine of the present day from that of our immediate predecessors. In speaking of fevers Sir William Gull[8] said: "In the consideration of these small-pox stands first, since through vaccination we have clearly demonstrated at least for one form of fever—and it seems but fair to infer the same for others—that recovery and subsequent immunity are produced by a process of impregnation and assimilation and not, as is still maintained by some, of elimination"; whilst rejecting the theory of zymosis, by which he says "we are carried back to the days of ignorance when concoction and maturation were made to explain whatever was obscure," he suggests that "what really constitutes the specific character of each fever is the attendant tissue change which, when completed according to the special poison, is followed by convalescence"—although I think it is pretty clear that he contemplated by tissue changes an alteration in the solid tissues of the body, his words do not inaptly apply to the changes which we believe are undergone by the blood. In his Harveian oration delivered two years later he again refers to the subject of infectious diseases, saying: "that they spread by emanations from the sick must have been long known and that such emanations are of a solid nature we may infer from the fact that they may be dried and conveyed from place to place, but in what state, whether as amorphous material or as germs, we know no more to-day than was known a thousand years ago."[9]

How different is the position now. Already we are acquainted with the specific organisms which are the *causa causans* of many of the febrile diseases and can safely assume that the others in which we have not yet discovered the micro-organisms are due to similar agency. How much more hopeful is the outlook now than when Gull said, "It is now universally acknowledged that the art of medicine is all but powerless in controlling the large class of diseases called zymotic. It may be there do not exist nor may ever be formed by art antidotes to their poisons. But should it be otherwise my duty at this moment still seems clear—that I ought not to stir up your minds to search for such secrets of nature. Upon this search too much time has already been wasted and an incalculable amount of life has been lost. Specifics will no doubt continue to be sought after, but preventive medicine will more largely obtain the suffrages of the best informed members of our profession."[10] Truly, as he says in another place, "the knowledge which [illegible] exhaustive to-day may in the changing circum[illegible] of the world be defective to-morrow." For it now [illegible] probable that most if not all of these diseases [illegible] we already know of some [illegible] te, and that as Sir John [illegible] ous substance which is ca[illegible] the [illegible] able of [illegible] first."[11] [illegible] he most [illegible] and the [illegible] dal, and [illegible] properties of the blood serum under certain conditions. The investigations which have been so actively carried on in recent years in these directions have greatly increased our knowledge of the blood and its component parts and we trust that they may lead to still further advances in the field of serum therapeusis—a field which offers a hopeful prospect for enabling us to counteract the bad effects to which specific disease-producing organisms are capable of giving rise in the living body.

INTERNAL SECRETIONS.

Another most important step onwards in our physiological knowledge and its application to the treatment of disease was made when we became acquainted with the connexion existing between that group of symptoms which we now call myxœdema and disease of the thyroid gland. Sir William Gull himself, in 1873, was the first to draw our attention to the cretinoid state supervening after adult age,[12] but it was from the researches of Ord, Reverdin, Kocher, Horsley, and Murray that the existence of what are spoken of as internal secretions of glands was suspected and proved.

The brilliant results from the administration of the thyroid gland or its extract in myxœdema raised our hopes and expectations that we might, by the administration of other glandular extracts, obtain benefit in those morbid conditions in which it appeared probable that an internal secretion bears a part. As yet these expectations can hardly be said to have been fulfilled. Neither in diabetes nor in morbus Addisonii has the administration of the pancreas or the suprarenal glands been followed by any marked or constant beneficial effect on the disease. The researches of Schäfer and Oliver have proved the [illegible] the suprarenal glands [illegible] and further researches [illegible] the physiological func[illegible] able us to make therapeutic use of them. Hitherto we have used these glandular extracts to supply the place of the normal secretions which we have inferred might be absent owing to disease being present in the secreting organ. Is it not possible—nay, probable—that it is not this simple absence but rather the presence of a vitiated secretion acting prejudicially on the organism which produces the evil with which we have to contend?

Further observations by Dr. G. Oliver[13] show the remarkable effects which are produced on the blood pressure by the administration of small doses of creatinin, uric acid and its compounds, glycogen, xanthin, and the purin bodies contained in food; while equally active depressors of arterial pressure are found in bodies so closely allied by chemical composition to those which increase it, as are creatin, hippuric acid, and hypoxanthin.

TROPICAL MEDICINE.

In other lines of research the progress made is not less remarkable. The ancients were well acquainted with the commoner forms of intestinal worms, although they were ignorant of the remarkable phases presented in their development. They have left us full and accurate descriptions of the clinical symptoms produced by them and the means which should be adopted for their cure.[14] Until a very few years ago we could hardly be said to possess more knowledge than our predecessors of the part played by the animal

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[8] Collected Writings, Sydenham Society, p. 47.

[9] Ibid., p. 70.

[10] Ibid., p. 75.

[11] Presidential Address, Transactions of the Clinical Society, 1903, p. 7.

[12] Transactions of the Clinical Society, vol. vii., p. 180.

[13] Oliver-Sharpey Lectures, THE LANCET, April 30th (p. 1175) and May 7th (p. 1262), 1904.

[14] Paulus of Aegineta, book iv., sections lvii., lviii., and lix.

kingdom in the dissemination and propagation of disease in man. It had long been [illegible] shared with animals the liability to [illegible] maladies—for example, rabies and [illegible]ion existed of the important part which the lower orders of creation play in the maintenance and diffusion of some of the most widespread and deadly of the diseases which affect man.

Slowly and gradually the natural history of malaria and yellow fever has been worked out. M. Laveran, in 1880, first discovered and described the organism of paludism in the blood, and his discovery, like that of the tubercle bacillus by Koch in 1882, forms an epoch in the history of medicine. Laveran's observations were carried on by many others, of whom I must mention Marchiafava, Bignami, Celli, and Golgi, who, together with many other distinguished Italian *savants*, did so much to make us acquainted with one portion of the life-history of the malarial parasite, many years before its complete life-cycle had been discovered by the suggestions and reasoning of Manson and the laborious and persevering investigations of Ross. Already the work done, mainly under the auspices of the Liverpool and London Schools of Tropical Medicine, has begun to bear fruit not merely by increasing our knowledge of malaria and certain other forms of tropical disease but by having in the short space that has elapsed had a marked influence in diminishing sickness and mortality in places which were so deadly to European life that trade could hardly be maintained with them. Nor is it only in these hotbeds of fever that beneficial results have been obtained, as Professor R. Boyce's account of antimalarial measures taken at Ismailia shows. The result of the sanitary work put in action by the authorities of the Suez Canal has been eminently satisfactory. The attacks of malaria in a population consisting of about 1900 or 2000 Europeans and 7000 natives have fallen from 2089 in 1897 to 209 in 1903 and the mortality has correspondingly lessened. These highly satisfactory results have been obtained at comparatively small expense, the Canal Company having expended £4400 in filling up and draining the marshy ground whilst the special antimalarial forces—the drainage and the petroleum brigades—have together cost £720 a year, figures which contrast most strikingly with a previous "expenditure of £15,000 on works designed with the intention of improving the sanitary condition of the town and £13,000 in medicine and medical attendance,"[15] without the production of any beneficial results.

The mystery surrounding the sleeping sickness of Africa has been partially dissipated by the discoveries of Castellani, Bruce, and Nabarro and the remarkable life-cycle of the trypanosoma is in a measure unravelled. A similar chain of events appears to occur in Texas fever and probably in other morbid states the lower forms of animal life play a much more important rôle than is yet recognised. Recent investigations by Leishman, Donovan, Ross, and Christophers tend to show that the condition of chronically enlarged spleen and cachexia which we have been accustomed to ascribe to malaria is more probably dependent on another distinct micro-organism.

Interesting as is the connexion which we now know exists between the lower forms of life and the presence of disease in man I must not occupy your time by further reference to it and I must pass by the additions to our knowledge of the nervous system and its disorders, of the blood, and of the application of electricity in its various forms to the diagnosis and treatment of injuries and disease, for it is not my intention to attempt to review the progress of medicine during the years that have elapsed since the Association last met in this place.

THE PRINCIPLES OF PREVENTIVE MEDICINE.

It appears desirable that I should remind you thus briefly of some of the more striking changes which have taken place in our conceptions of diseases, their causes, effects, and our means of opposing them, for events crowd so rapidly on our notice in these days that we are apt to forget how short a time has elapsed since the veil was raised and we began to see—dimly it may be—the connexions which exist in disease as well as in health between man and his surroundings. Herbert Spencer's "environment" and Darwin's "survival of the fittest" depend to a great degree on forces which when these phrases were first made use of were not present to the minds of their inventors.

The exact knowledge, based on scientific research and demonstration, which we now possess of the cause and nature of disease has greater influence on preventive or State medicine than on clinical treatment. Recognising the sources of our ills we are in a position to avoid and to guard ourselves against them. To the general public the advances made are most palpable in the triumphs of modern surgery, which is in some danger of being led into excesses by the impunity with which operative measures can now be undertaken. This knowledge of facts in the place of the theories of former days leads me on to a consideration of the position in which medicine has stood in the past and that which it should now hold in relation to the public and the State.

IN GREECE AND ROME.

It is to be regretted that we know so little of the position which the practitioners of medicine held in the State in the Greek and Roman worlds. In Greece, at the period of its highest intellectual activity, we know from the references made to physicians by Plato and others that they were men of learning and possessed of considerable influence. From Plato also we learn that there were two or more distinct classes or grades of practitioners, for in the Laws the Athenian asks Cleinias: "You are aware that there are two classes of doctors?" Cleinias: "Yes, and did you ever observe that there are two classes of patients in States—slaves and freemen; and the slave doctors run about and cure the slaves or wait for them in the dispensaries ......, but the other doctor, who is a freeman, attends and practises on freemen?" and the Athenian stranger goes on to describe the differences in the mode of practice of these two classes of doctors.[16]

From this passage also we learn that the Greek cities at that time possessed dispensaries—*ἰατρεῖα*—places where the slaves and probably the poorer citizens were wont to consult the doctors. From another passage in the Gorgias it appears that in the Greek cities there existed medical officers who were appointed by the municipality, for when speaking of the power of rhetoric Gorgias says "that if a rhetorician and a physician were to go to any city and had there to argue in the ecclesia or any public ceremony which of them should be elected State physicians the physician would have no chance." Socrates: "You were saying, in fact, that the rhetorician will have greater powers of persuasion than the physician even in a matter of health." Gorgias: "Yes, with the multitude." Socrates: "You mean with the ignorant."[17] I fear we know to our cost that in matters of health the rhetorician and the politician is still not infrequently of more influence with the multitude than the physician.

Very little is known of the position of medical practitioners in Rome during republican times. The wealthier Roman families appear to have kept in their retinues slaves or freedmen who had received some instruction in medicine and surgery, most probably in some of the Greek colonies in Italy, but in Imperial Rome we know that in medicine the larger cities possessed some municipal organisation similar to, if not identical with, that which had been in force in earlier Greek times. Before the time of Antoninus Pius (A.D. 136) recognised medical practitioners were exempt from ordinary civil obligations and local taxation but their numbers had so largely increased by this time that it became necessary to limit the number of recognised practitioners in each city who should enjoy this immunity; and Pliny, who seems to have had nearly as bad an opinion of our profession as Cato, complains that the law unduly safeguarded physicians and that they alone could kill a man with impunity.[18]

The disorganisation which after the fall of Rome affected every community in Western Europe envelops the subsequent position of medicine in obscurity. During these unsettled times the doctors appear to have been attached to persons rather than to communities; and this condition prevailed to a greater or less extent until comparatively recent times, and is even now perpetuated in the honorary posts attached to the royal families.

Time does not permit me to sketch, however briefly, the steps by which in this country the mediæval guilds of barbers, barber-surgeons, and surgeons became gradually developed into the surgeons of to-day.[19] The better regulation of the profession in this country may be said to date from the institution of the Royal College of Physicians in 1518, which was intrusted with the general supervision of all persons not graduates of the two English Universities of [illegible] practise physic through- [illegible] a charter by Henry VIII. [illegible]

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[15] Report by H.M.'s Agent and Consul-General on Egypt and the Soudan, April, 1904.

[16] Book iv, p. 720, Jowett's Translation.

[17] Gorgias: p. 456, Jowett's Translation.

[18] Natural History, chapter xxx., "Discunt periculis nostris et experimenta per mortis agunt, medicoque tantum occidere impunitas summa est."

THE BRITISH MEDICAL ASSOCIATION AND MEDICAL LEGISLATION.

Sir John Simon in his most interesting work on English sanitary institutions[20] has a chapter entitled "Growth of Humanity in British Politics." In it he traces the influence of the religious revivalism under the Wesleys and the noble work of Howard in arousing among the better-informed classes a humanitarian spirit which has been one of the many factors, and perhaps the most powerful, which led to the reformation of the criminal code, the abolition of slavery, and the Factory and Sanitary Acts of the nineteenth century. During the earlier part of the nineteenth century it was gradually brought to the attention of thoughtful men that steps should be taken to regulate the education and the practice of medical men. The first result was the passing of the Anatomy Act in 1832, which was followed by the appointment in 1834 of a committee of the House of Commons to inquire into "the laws and usages regarding the education and practice of the various parts of the medical profession in the United Kingdom." No report was presented by this committee although it took a great deal of evidence; part—that relating to Scotland and Ireland—was never printed and is supposed to have perished when the Houses of Parliament were burnt. Mr. Warburton, who acted as chairman of the committee, introduced in 1840 a Bill into the House for the registration of medical practitioners but found little support. Sir James Graham and Mr. Manners Sutton prepared and brought in a Bill, four years later, "for the better regulation of medical practice throughout the United Kingdom." The Government of the day declined to interest itself in the Bill, and no further action took place until this association—then called the Provincial Medical and Surgical Association—under the leadership of Sir Charles Hastings, brought the subject under the consideration of Lord Palmerston in 1853, and of Sir G. Grey in 1855, in the hope that the Government would promote the Bill which the association had prepared. Neither Minister would undertake to bring it in as a Government measure, and a private member—Mr. Headlam, M.P. for Newcastle—in 1855, and again in 1856, introduced a measure which represented the views of the association. By the influence of Mr. Cowper, then President of the Board of Health, the House of Commons referred the Bill to a select committee—a proceeding which eventually resulted in the Medical Act of 1858, which has been productive of incalculable benefit both to medical education and to the public. This association may well take pride in remembering that this was accomplished mainly through its influence and action.

POOR-LAW AND PUBLIC HEALTH LEGISLATION.

Contemporaneously with the awakening of public opinion to the necessity for a reform in the constitution of the medical profession by which the public might be able to discriminate between those who were and those who were not legally qualified to practise, the need for increased legislative power for sanitary purposes was recognised. The public mind had been aroused by the ravages of cholera which spread through the land in 1831–32 and to a less degree in 1848–49; whilst the revelations of the conditions under which the labouring poor [illegible] reports of Dr. Neil Arnott, Dr. [illegible] Mr. Chadwick, and others to [illegible] appealed to all but the most thoughtless and prepared the way for sanitary legislation.

I am not forgetful that from the earliest periods of civilisation it has been recognised that large centres of population have necessitated laws and regulations for the prevention of nuisances and the removal of refuse. These were among the most important duties of the ædiles in Rome, and in the records of mediæval London are constant references to the removal of nuisances, the cleansing of the streets, and the necessity [illegible] that is increasing in the river ar[illegible] ames to the great abomination ar[illegible]

The dissolution of the monasteries and other religious foundations in the sixteenth century led to the whole country being flooded with pauperism, for however self-indulgent the ecclesiastics may have been they had always exercised supervision over the poor on their estates, and administered relief as required to those who were in the employment of the religious houses or of their numerous tenants. This deplorable condition of the nation gave rise in the early years of Elizabeth's reign to our present Poor-law, and during her reign and that of her immediate successors very stringent Acts of Parliament and municipal regulations were passed not only for the removal and prevention of nuisances but also dealing with vagrancy and mendicity and provision for the relief of pauperism and the care of the impotent poor. From that time onward numerous local Acts on a variety of subjects bearing on the national health were added to the statutes but no comprehensive scheme was instituted until we come down to the Victorian Era, and the passing of the Public Health Act of 1848 may be taken as the date of the rise of a fresh branch of medicine—preventive or State medicine.

It was then that the State publicly recognised what Hobbes 200 years before, when writing of the "Commonwealth," had indicated as the function of the governing power.

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The health of the people, both bodily and mental, is the principal asset of the nation. Without a vigorous and energetic population no nation can make progress and coincident with the cessation of progress is the commencement of decadence. We have heard of late very much about the deterioration and degeneration of our population. I cannot venture to express an opinion on such a complex and difficult subject but I can safely say that there exist no standards by which our present can be compared with our past condition and I greatly doubt if those who talk and write so volubly on the subject are acquainted with the reports made to the Poor-law Commissioners 60 years ago. The present state of our population is serious enough, and it behoves us all, medical men and laymen alike, to do what we can to ameliorate, if we cannot remove, the conditions which militate against the health and happiness of the population.

Steam and electricity have revolutionised the world and the conditions of modern life are now entirely different from those prevailing during the first decades of the last century. The food, clothing, housing, and circumstances in which large numbers of our population work are very different now in both our rural and urban populations from what they were then. Are the changes calculated to benefit the physical and mental condition of the people? or have all our boasted improvements proved snares and delusions? These questions are fraught with the greatest importance to the nation, questions which in the absence of any known standards for comparison with the past it is difficult, if not impossible, to answer. I trust that the committee of the Privy Council on the physical disability of recruits now engaged in framing its report may urge on the Government the desirability for a physical census of the nation being taken and renewed from time to time and that the physical condition of the children in our primary schools should be watched, recorded, and reported on as regularly and carefully as their educational progress. It is only by information of this sort, collected by competent persons and duly weighed by those capable of forming an opinion on the medical aspects of the question, that improvement can be hoped for.

THE CODIFICATION OF PUBLIC HEALTH LAW.

I have already alluded to the Public Health Act of 1848 as marking the introduction of preventive or State medicine. Since that date numerous royal and other commissions have been engaged in the investigation of a very large number of subjects bearing on the national health, with the result that from that time to the present the legislature has been continually occupied in passing new measures for the furtherance of health or the amending of old ones.[23]

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[19] For much interesting information on these points, vide South's Craft of Surgery, and papers by D'Arcy Power, F.R.C.S., in the Medical Magazine, 1899.

[20] 1890.

[21] Order of Edward III., 1357, vide Sir J. Simon, p. 40.

[22] Hobbes's Leviathan, chapter xxx.

A certain amount of consolidation of the sanitary law was effected by the Act of 1875 but the mass of sanitary legislation and the involved nature of it prevent the public, and I might say the profession also, from being able to follow it. Its complexity in part arises from different departments of the central government being responsible for the means which are taken for safeguarding the public health.

Legislation at the present time appears to me to be in advance of administration and it is not so much fresh legislation that is needed as the simplification and codification of the existing law. The administration of the law cannot be much in advance of the knowledge and feeling of the public and while giving full credit to municipal and other sanitary authorities for the good work already done and the efforts they are now making, the medical officers of health throughout the country are painfully aware how great is the ignorance shown by the mass of the population of the principles on which the public health depends and how great is the necessity for educating the general public to a proper appreciation of the elemental facts of sanitary science.

The all-important part that micro-organisms play in the putrefaction and decomposition of organic matter and in the production of disease was unknown when sanitation first seriously occupied the attention of the legislature. The air, the earth, and the waters all teem with them; and although we recognise in some our deadliest foes we must not forget that it is due to the beneficent action in their countless millions of other members of this group that we mainly owe both the purification of the water we use and the earth we live on; if it were not for their action we should be smothered by our own refuse. As a consequence, this increase of knowledge has rendered it necessary for those who hold important positions in connexion with preventive medicine to have special preparation for their work. The need for this was foreseen by Sir Henry Acland who, in his address, remarks that:

> The Government will have to define the duties to be discharged by public health officers or other officers of public medicine and the General Council of Medical Education will be able to direct the education of those who aspire to the performance of the duties so defined.

The General Medical Council and the educating bodies have fully acted up to this expectation of Sir Henry Acland and the universities and diploma-granting corporations have established special courses of instruction and special examinations requiring a very high standard of professional knowledge from those who desire to qualify themselves for holding responsible posts in preventive or State medicine, which is now justly regarded as the highest branch of our art.

Does the large body of highly qualified officers of health and do the medical officers of the Local Government Board possess the influence in the Government and in the country which they ought to own? I fear not; neither in the Government nor in the country do they hold the position which they are entitled from their high qualifications and the importance of their duties to command. Your President last year directed your attention to the need for reform both in the central authority—that is, the Local Government Board—and in the local authorities.

THE INEPTITUDE OF THE TREASURY REPORT.

During the past year your council and its medico-political and public health committees have been engaged in framing a Bill which it was hoped might be brought before the consideration of the Government. I am afraid from the nature of the report of the Treasury Committee appointed to consider the position and duties of the Board of Trade and the Local Government Board there is not much prospect of the importance of the Public Health Department of the Board receiving any increase either of power or payment. The health of the nation, on which its success and prosperity depend, is thrust into the background with the remark that the President of the Board "has the advantage not only of the medical officer of the Board but also of the general administrative experience of the permanent secretary." In an article in the *Times* of June 14th last upon the report the writer remarks: "The commercial community cannot hope to exercise the influence due to its position in national life so long as its official representative is treated as of second-rate importance." These words appear to me to apply with even greater force to the Department of Public Health in the Local Government Board.

THE DUTIES OF THE LOCAL GOVERNMENT BOARD AND MEDICAL OFFICERS OF HEALTH.

I do not think that there would be any advantage in my dwelling on the terms of the Bill which your Council proposed but there are certain points in connexion with it that should be continually pressed upon the attention of the President of the Local Government Board and the Government:

1. That whilst the administration of sanitary legislation must be left to the local authorities the central authority should act as an advisory as well as a supervising authority.
2. That both in the Local Government Board and in the local authorities the medical element should have greater weight and authority than at present and that the medical officers of health throughout the country should be responsible to the Local Government Board as well as to the local authority and hold their office during the pleasure of the Local Government Board and not at the will of the local authorities.
3. That steps should be taken by which the medical officers of health and the Local Government Board, which at present is the department mainly charged with supervising the administration of the Sale of Food and Drugs Acts, should undertake further duties of supervision and watchfulness in relation to the purity and wholesomeness of articles sold for food.

NEED FOR SUPERVISION OF THE SALE OF FOODS.

The need for such increased supervision was forcibly brought to the attention of the commissioners appointed to inquire into arsenical poisoning. At the present moment there are no means by which the officers, medical or other, of county, borough, urban, or district councils who are responsible for the local administration of the Acts relating to the sale of food can enter the premises and obtain information concerning the nature of food-stuffs or the process of their manufacture. At present the maker of food-stuffs sold under a fancy name is under no obligation to submit to any authority the composition of its ingredients. It is only after the food-stuff has been placed on the market that any control can be exercised by samples being taken for analysis, which, although showing the absence or presence of deleterious matter, gives but little guide to the suitability and value of the preparation as a food. The enormous bulk of these fancy and largely advertised foods on the market, both home-made and imported, renders it essential that further power in the supervision of food should be placed in the hands of the health authority.

RURAL HYGIENE

The necessity for sanitary regulations being so much greater in large towns with their dense populations, manufactures, and difficulty in disposing of their refuse naturally led to the earlier efforts in the direction of improved sanitation being especially directed to their most urgent needs, and hence it has arisen that the methods of sanitation applicable to large towns have been accepted by the public as the only ones and are imitated in rural districts to the great loss and harm of the community.[24] It is greatly to be regretted that Mr. Chadwick's doctrine that not only domestic sewage but all sorts of refuse are best removed by the scour of running water has received such general adoption. Whilst the advantage of the present [illegible] which although ruinously expensive is [illegible] our large towns and must perhaps [illegible] t in accordance with common sense that it should be recklessly applied throughout the country. The disposal of the liquid sewage, not only of our large towns but of our villages, villa residences, and country-gentlemen's [illegible] has become a most difficult problem for modern [illegible]

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[23] [illegible] 1858 by which [illegible] together with 1871, when the [illegible] of 1888 and 1894.

[24] [illegible] G. Vivian Poore, M.D., [illegible]

"In rural and [illegible]
more to ask othe [illegible]
feed him or clotl [illegible]
of the individu [illegible]

[illegible] system of sewerage necessitates a constant water-supply far in excess of the needs of the inhabitants for domestic use; it introduces a source of danger of pollution for the springs and wells of the locality, and renders necessary the introduction of waterworks to supply uncontaminated water—if, haply, such can be found—brought, it may be, from a distance, and entails a heavy and permanent charge on the locality. The interest of the money thus spent would in many instances provide for the necessary expenses which a proper system of scavenging would entail.

URBAN HYGIENE.

Is the Local Government Board, and are our urban and rural sanitary authorities, really guided by their sanitary officers in these matters? It is hard to believe it, for one sees around one in the metropolis and in our provincial towns and rural districts numberless instances of divergence from the principles of sanitary science. The enormous value of land in London and our large cities has led to a remarkable change in the character of their buildings. At the very time that it has become generally recognised that fresh and moving air is one of the necessities for healthy life and whilst vast sums are being paid for securing open spaces and widening streets the private speculator is allowed to erect huge piles of bricks and mortar which effectually block the currents of air which are required to freshen and vitalise the atmo [illegible]
and thickly populated courts. [illegible]
ance with our present knowledg [illegible]
architects understood much better the principles necessary
for healthy life; [illegible] those
around us here. [illegible] acious
quadrangles freel [illegible] unded
by sets of rooms [illegible] the air
on both sides and seldom more than three storeys in height. The greatest enemies that the disease-producing microbes have are air and sunlight—some of them are deprived of vitality and their power of evil by a few hours' exposure to sunlight. What chance has the microbe of meeting these conditions in the piles of brick and mortar which are now built around central wells, into which a few rays of daylight struggle by means of glazed tiles and to which the purifying and cleansing action of a brisk wind can never reach?

We see equally regrettable proceedings, although of a very different kind, going on in the outskirts of London and our large provincial towns and I regret to say in many of our rural villages. Rows and rows of houses—what are often termed "workmen's houses"—are erected on the plan of
[illegible] und them, no
[illegible] the sanitary
[illegible] between them
[illegible] authorities in
their by-laws have based them on ones which may be applicable to London but are calculated in suburban and rural districts to reproduce all the evils of the town. Sewers and waterworks are provided at the expense of the district, not for the benefit and advantage of the inhabitants,
[illegible] rden ground and space
[illegible] landowner and builder
[illegible] ground-surface at their
[illegible] of
nation.

In the decennial supplement to the
report for 1895, Table R shows that t
in England and Wales is in proportion t
population, the districts most densely
[illegible] great

[illegible] ortality is by
[illegible] a measure of
[illegible] of Tables S
[illegible] eral's report shows how excessive
[illegible] "Urban England." Taking the
[illegible] e infantile mortality of the whole
[illegible] 1000 births for males under one
[illegible] ery 1000 births for females of the
[illegible] rate being 180 for males and 149
[illegible] r "Rural England" being 136 and
[illegible] respectively. Table Q shows the same in a still more striking manner; the agricultural counties of Herts, Huntingdon, Wilts, and Westmorland, in which there are no large towns and no crowded industries, stand lowest with an infantile mortality not exceeding 100, whilst Northumberland (182), Durham and Lancashire (179), and Nottingham (172) have the highest infantile mortality of all our counties, London (149) and Middlesex (130) holding intermediate positions. Other factors besides density of population undoubtedly have a share in producing these results; but there can be no doubt that density of population is one of, if not the, most important of the causes producing this deplorable sacrifice of life.

Very interesting figures are given by Dr. J. F. J. Sykes in his Milroy lectures, 1901, showing that whilst the general and infant mortality in the Peabody and model buildings in St. Giles's is much below that of London generally, as would be expected from the class of persons inhabiting them and the supervision to which they are subjected, the death-rate from certain infectious diseases was in excess of that of London, demonstrating the risk which is run by aggregating, even under favourable conditions, a large population under what may be considered one roof.

The phrase "back to the land" has of late been much in the mouths of many would-be philanthropists and politicians and much has been written on this theme in the ephemeral literature of the day. I fear that as a remedy for physical deterioration or agricultural depression it must be regarded as utopian; even the powers of the legislature cannot prevent the course of economic laws from taking effect but the legislature might, I venture to think, do much which would aid in preventing the continual growth of known and acknowledged evils. It is the province of the legislature, as Hobbes said, to procure the safety of the community even if it interferes with the freedom of individual action; it is done every day in connexion with infectious disorders and with the approval of the public. Our sanitary authorities, guided as they now should be, not by theories of disease, but by facts capable of scientific demonstration, should have the power to restrain both individuals and public bodies from perpetuating and increasing evils which threaten materially to injure our welfare and prosperity as a nation. Overcrowding, whether of houses or localities, should be more stringently dealt with;
[illegible] of certain trades
[illegible] nd public money
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congestion of our central districts, whereas they might be used for the opposite purpose and enable many of our trades and much of our business to be carried on outside the limits of our towns. Rural sanitary authorities should be taught to shun instead of imitating those methods of sanitation
[illegible] so costly, so difficult

[illegible] n able to bring before
[illegible] h in a manner worthy
of yourself, this great audience, and the subject; it is one of supreme importance, far transcending the ordinary political issues of the day. I have endeavoured to point out the need

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the country and the empire depends.

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[13] Poore, Rural Hygiene, third edition, p. 213.

leprous parents are not leprous and if early separated from their parents rarely become so. To save the children it would seem as urgent, as in the case of children born of tuberculous parents or even more so, to remove them at once from their unhealthy surroundings to a district free from leprosy. I cannot end my remarks on this disease without paying a tribute to the highly scientific investigations of this scourge by my old friend and pupil, the late Dr. Beavan Neave Rake, who fell a martyr to this horrible malady as the result of devoting his life to the alleviation of the sufferings caused by it among the natives of Trinidad.

After what I have said of leprosy I need scarcely more than allude to malaria, which in lectures delivered before the Royal College of Surgeons in 1884 was described as a climatic diathesis. The protozoon was discovered by Laveran in 1880 and its life-history has since then been worked out—its inoculation after sunset by the night-feeding anopheles and its destruction by quinine. Its heredity therefore need not be discussed but the effects of malaria in infancy and childhood are most injurious, not only on growth and development but especially on the mental faculties of the child. Protection by avoidance of exposure after sunset and by quinine and early removal to a non-malarious district should be insisted on for the healthy rearing of children born in malarious districts. With tubercle, leprosy, and malaria taken out of the diatheses and hereditary disorders by the discovery of their respective parasites and classed under infective diseases the belief in general hereditary diseases has been very much shaken.

We pass now to the consideration of a disease which we know can be transmitted by either parent to the offspring during the active stage of the disease. I allude to syphilis. From one generation to the next it passes, but beyond that transmission is very doubtful. I doubt whether a disease propagated only so far deserves the name *hereditary* and I am inclined to suggest that the term *transmitted syphilis* far more correctly expresses our knowledge of this disease in childhood than the term *hereditary syphilis* which is commonly employed. This disease, so aptly described by the late Dr. W. Moxon as a "fever diluted with time," becomes transmissible owing to its lengthened period of activity, but the exact process of transmission will remain obscure and to some extent theoretical until the actual organism causing the fever, be it protozoon or bacillus, is discovered. At present we only know it by its effects. Mr. J. Hutchinson, whose clinical researches in this disease cannot be too highly praised, regards the disease as capable of being carried by either the sperm or germ cell to the fœtus or by the mother to a healthy fœtus if she be infected during her pregnancy. What is certain is that if both parents suffer severely from the disease the results to the offspring are doubly disastrous. I have notes of a case of this kind in which the first eight conceptions ended either in miscarriage, premature births, or the births of children that only survived a short period, and it was not till the ninth that a child was born with sufficient vitality to live through the first two years.

In criticising the term *hereditary* in its relation to infantile syphilis I mentioned that it was doubtful if the disease could be transmitted to a third generation. I have notes of only one case bearing on this subject, but it is a very striking one. A blind man met a blind girl at a school for the blind and they married. They were both characteristic specimens of transmitted syphilis, having notched teeth, opaque corneæ, square heads, and scarred mouths. The man was admitted under my care for syphilitic bone disease and hearing that his wife had an infant two months old I sent for it. The child was not a fine one but she was quite healthy and during the time I watched her, more than a year, she showed no signs of transmitted disease. Mr. Hutchinson says that about eight cases have come under his observation in which persons undoubtedly the subjects of inherited disease have become parents. With one doubtful exception he had never been able to discover any evidence of disease in the offspring.

Syphilis is a disease over which drugs exert a powerful controlling influence and under favourable surroundings and good diet it tends to wear itself out. In comparing syphilitic with tuberculous families it will generally be found that the later children of syphilitic parents are the most robust, whilst the elder children of phthisics, that is those farthest removed from the later stages of the disease in the parents, are the most healthy. Syphilis although apparently not transmitted as an active disease to the third generation nevertheless has such an effect on the developing infants of the second generation as to lower their general physical type, which is shown in stunted growth, flattened bridge of the nose, imperfect teeth, coarse skin, and general defective development. The new type thus formed will have a tendency to be transmitted and by intermarriage to be rendered more permanent and this disease thus becomes one of the causes of physical degeneration in large cities.

Another disease more especially occurring in large towns and responsible but to a less extent than syphilis for physical degeneration is rickets. So far as our present knowledge carries us this is a purely dietetic disease but it can be transmitted both as a tendency and as a type. It can be produced in any child by withholding proper nourishment and substituting an innutritious diet. Ignorant artificial feeding lays the foundations of rickets which first shows itself in the over-distended abdomen, perspirations, capricious appetite, and irregular bowels, then follow the enlarged epiphyses, the bending of bones, the softened ligaments, large head and widening between the eyes, beaded ribs, and L-shaped thoracic depressions. It is a common disease in underfed puppies and by breeding from rachitic types the dachshund has been specialised with its large head, long body, short bent leg and thigh bones, and splay feet. The most approved type of field spaniel seen at dog shows is also a good specimen of hereditary rickets. The general effect of rickets is to enlarge the head and shorten the stature. So long ago as 1881 in a discussion at the Pathological Society I suggested that it might be justifiable to induce rickets artificially in microcephalic idiots and small-headed infants with a view of giving more room for the brain to develop. I think it may be said that persons who have recovered from rickets and have afterwards been well nourished often show great capacity for learning, so that this disease offers some compensation in greater skull capacity for the inconvenience of bow legs or knock knees, all of which may be corrected by surgical treatment. But a child that has been the subject of rickets never attains to what should have been his proper height.

The two diseases, syphilis and rickets, the one dependent on uncontrolled vice and the other on injudicious or insufficient feeding and bad air, are the chief causes of the stunted growth and weak physical development of the lower orders in large towns. We have only to watch an organised demonstration of those out of work march through the streets of London to have brought home to us the wretched specimens of humanity reared in the slums and alleys of this great metropolis. Their poverty is seen to be obviously due to incapacity, their incapacity to defective development, and their defective development to moral and physical degradation. Every encouragement should therefore be given to those societies whose work it is to rescue children from the pernicious and unhealthy surroundings of towns and bring them up in the fresh air of the country.

Rheumatism is another disease or group of diseases which has been ranked as a diathesis and regarded as hereditary. Some believed rheumatic fever, rheumatoid arthritis, and gout to be simply phases of the same diathesis at different periods of life. Others with clearer insight recognised two distinct diatheses, a rheumatic and a gouty. But rheumatic fever runs a course with definite symptoms like an acute specific fever and now that a diplococcus has been found in the rheumatic nodules, joints, and vegetation on the valves, which can be cultivated and be used to reproduce the disease in the lower animals, this disease will soon be classed with other specific fevers and the idea of its being hereditary will disappear. There seems, indeed, to be evidence of "rheumatism houses" as there are "tubercle houses" and "cancer houses," probably low-lying badly-drained places where such organisms as cause the diseases once introduced continue to flourish. I am inclined to think that the history of joint diseases will soon have to be rewritten entirely and the so-called rheumatisms will be classified as inflammations of joints dependent upon this or that organism. We already know that the gonococcus whether introduced through the conjunctivæ or urethra may cause a specific inflammation of a joint in which the coccus can be traced. We know that the pneumococcus, bacillus coli, streptococcus, and staphylococcus may all attack the synovial membranes, and probably there are others as yet undistinguished which induce special inflammations.

When we come to gout we recognise another dietetic disease similar to, or rather the antithesis of, rickets. Gout like rickets can be produced in a single generation and again like rickets it shows a te[illegible] ing generations. Ricket[illegible] infants, gout by the [illegible] addition of fermented li[illegible] of gout, which is said to exist in three-fourths of the families of the leisured class, it is necessary to remember that the children are brought up as a rule in the same affluent circumstances as their parents and are early taught to live in the same way. The type of man usually regarded as gouty is illustrated by the John Bull of *Punch*—a plethoric, heavy, genial, but somewhat irascible individual, with a very good opinion of himself, but the type does not always breed true, for there are many thin, wizened, little old men who are martyrs to gout.

[illegible] the so-called diatheses and [illegible] one finds that modern [illegible] the views formerly held as [illegible] supposed to exert in the causation of disease. Tubercle, leprosy, malaria, and I think I may say rheumatic fever, are all infective diseases the micro-organisms of which are recognised. Syphilis when active may be transmitted to the second generation, but there its influence as such probably ceases. Rickets and gout, the two dietetic diseases, [illegible] to carry their effects [illegible] deposit is the sole surv[illegible] But there may be yet [illegible] may be that this is not a mere crystallising out of a supersaturated solution of the salt from the synovia, for if so all joints ought to suffer alike. Perhaps it may be shown that a particular micro-organism is favoured by the presence of a highly nitrogenous and alcoholic medium and is the cause of the precipitation; and that in rickets the mal-assimilation may favour the growth of another organism the presence or the toxin of which may cause the changes in the bones and epiphyses characteristic of that disease.

I ought perhaps to make a few remarks on cancer which, in spite of the strong evidence of its local origin, many have thought to be a hereditary disease. The late Sir James Paget strongly believed in its hereditary character yet was only able to discover a trace of the family history in one in three of his private patients and in one in five or six among hospital patients. John Birkett always maintained that it was much more common to find cancer commencing in a person who had no family history of cancer than in one who had, and Cripps showed that the proportion of deaths from cancer among parents and grandparents of cancerous patients was scarcely larger than the proportion of deaths from cancer to deaths from all other causes. Evidence seems to be accumulating that we are dealing with a disease that in certain circumstances is contagious and inoculable in the same species. Cancer in mice can be readily inoculated in other mice. It seems certain too that cancer attacks persons living in the same circumstances and in certain houses. I think I can claim to be the first to publish the particulars of three persons unrelated having cancer at the same time, in the same house, in a note to THE LANCET on April 2nd, 1904 (p. 929). A gentleman living in London had rodent ulcer of the face on which I operated several times. His wife had cancer of the breast from which she died some two years after operation and the gentleman's partner who lived in the same house died from cancer of the tongue. I think there is much more evidence of contagion among persons of advanced age and weakened resistance subjected to local irritation than there is evidence of hereditary transmission.

When we pass in review defects of the nervous system we are compelled to admit that a hereditary disposition in these cases is often very strongly marked. In the case of idiots Shuttleworth and Fletcher Beach found in 21·38 per cent. hereditary mental weakness (insanity or imbecility) and in 20 per cent. epilepsy and allied neuroses, and parental intemperance in 16·38 per cent. Whether disuse of the brain in the parents may be regarded as predisposing to idiocy some probably would be inclined to question but the late Langdon Down gives some interesting statistics concerning the children of the three learned professions, law, medicine, and the church. 3 per cent. were the children of lawyers, 4 per cent. the children of medical men, and as many as 18 per cent. the children of clergymen in his asylum for the children of the better classes. He explains this by supposing that for success in law there is required the greatest amount of mental and physical vigour, that in medicine the race is less urgent and the claims not so imperious, whilst in the clerical profession a moderate success is still more insured and there is less claim among the rank and file for great mental and physical exertion. Galton approached this question from the opposite standpoint. He took the members of the councils of the most prominent scientific societies of London and found that the legal profession furnished 11 per cent. of the foremost men of eminence. The medical profession gave origin to 9 per cent. of scientific men, whilst the clergy gave birth to only 6 per cent. of men of science. The gradation, being similar though not the same, renders these two observers' facts taken together extremely suggestive. To turn for a moment to a more inviting subject, that of genius, I think it is generally admitted that Galton in his book on "Hereditary Genius" proved that where a genius had once been developed exceptional ability was apt to be shown by many of his immediate descendants and in some instances for several generations. Havelock Ellis has attempted to show that there is a relation between genius and stature. Taking the average height of these islands as given by the Anthropometric Committee of the British Association as from 5 feet 4 inches to 5 feet 9 inches he proceeded to make a table of all the recognised geniuses and found that [illegible]e above 5 feet 9 inches, or tall, and 125 below [illegible] inches, or short, and only 74 were between these [illegible] so that he concluded that genius abhors the middle [illegible]

There are some nervous affections which are very hereditary and are prone to attack individuals of a certain stock at a definite period in their lives as if certain parts of the nervous system owing to some original defect were liable to wear out before the rest. Mr. D. S. Gerrish at the Clifton meeting of this society held in June last related the history of a family in which he had traced through five generations a special paresis always affecting the distribution of the anterior tibial and peroneal nerves, commencing between the ages of 22 and 26, and leading to muscular atrophy. It attacked females as well as males and he had traced it in 16 individuals belonging to this family.

Galton and Karl Pearson have attempted to show that hereditary peculiarities are transmitted in definite proportions so as to be capable of being expressed with mathematical precision. Galton took stature as his standard to work upon, premising that what would be true of one quality, physical or mental, would be true of all. He came to the conclusion that hereditary peculiarities were transmitted in the proportion of one-third to a son, two-thirds to a daughter, two-ninths to a nephew, and one-tenth to a grandson. Pearson working at the resemblance of brothers found that the measure of these, indicated by the well-known regression line, was as 2 to 1—that is to say, that if one of the pair exceeded the mean by a certain amount the other of the pair tended to exceed the mean by half the amount; and similarly in respect of defect from the mean. This was always true for all the physical characters yet worked out in man. He then extended his observations to ability and intelligence and found as the result of many observations made on 1918 pairs of brothers that the index worked out almost precisely the same—i.e., as 2 to 1. He concluded that the psychical characters were inherited precisely as the physical and that though education might aid, it could never create, intelligence—"it must be bred."

Deaf-mutism is a condition which has been supposed to be attributable largely to in-breeding, but the evidence as to this does not appear to be absolutely conclusive.[4] Certain it is that if a deaf-mute has appeared in a family the defect will almost certainly appear in other members of the family, among cousins or indirect descendants. Deaf-mutism probably depends on various defects both structural and nervous which may vary in transmissibility. Edward Cock found absence of semicircular canals, or cochlea, and closure of the *fenestra rotunda*, reversions to a simple type, whereas others have attributed the defect entirely to nervous lesions. It is often associated with idiocy in Switzerland where in some cantons 1 in 206 is a deaf-mute.

One of the most remarkable of hereditary diseases is hæmophilia which selects only the males on whom to produce its effects, yet it is only transmitted by the females of a family. Nothing apparently seems to be known of the pathology of this peculiar disease, but the mode of transmission is not peculiar to bleeders; for colour-blindness almost invariably follows the same law. Earle traced colour-blindness through five generations, and out of eight families there was only one in which the defect was not strictly limited to the male sex, but it was always transmitted by the females; nine-sixteenths of the males were affected but only one-fifteenth of the females.

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[4] In-breeding, according to Shuttleworth and Langdon Down, simply causes a concentration of any particular tendency.

Polydipsia has been stated by Gee to follow the same law, attacking the males and being transmitted by the females. Of the various congenital defects of the eyes which have been shown to be hereditary, total absence of the iris, coloboma, and irregular pigmentation of the membrane have been noted in successive generations. Amaurosis and congenital cataract, external and internal strabismus, dependent on errors of refraction, are all liable to be transmitted. Nyctalopia, or day-blindness, and hemeralopia, or night-blindness, are both hereditary. Albinoes all more or less suffer from nyctalopia, and hemeralopia has been traced by Cunier through six generations.

If we now proceed to consider external defects and deformities we shall find abundant evidence of hereditary transmission through many generations. Of skin diseases ichthyosis is one of the most remarkable and in the family of the celebrated porcupine man Lambert, who was exhibited at the Royal Society in 1731, the disease affected the males for four generations and two of his descendants were exhibited in 1802. Psoriasis also shows a tendency to become hereditary and Hutchinson has suggested that it may in this way become the parent of ichthyosis. The same peculiarity in transmission, as noted in hæmophilia and colour-blindness, has also in several cases been noted in regard to ichthyosis—namely, that it may attack only the males and be transmitted by the females.

The most remarkable instances of hereditary transmission through many generations are furnished by such deformities as supernumerary fingers and toes and suppression or webbing of digits. In the Guy's Hospital Reports for 1881 I traced through five generations the development of supernumerary fingers and toes. A great-great-grandmother had 80 descendants, of whom 24 individuals, or 30 per cent., were thus affected. Two other deformities were also found in this family—viz., webbing of certain fingers and toes and hare-lip and cleft palate. It would seem that in some cases these supernumerary digits have been reproduced after amputation and even re-developed after a second amputation. I have never met with this experience in my own practice, but Darwin quoted three instances in which it occurred and explained the recurrence as due to "reversion to an enormously remote, lowly organised, and multidigitate progenitor." It is known that the fins of fishes may be reproduced after amputation and the salamander's feet and tail will grow again after removal even to six times. Not less tenacious of reproduction in successive generations is the suppression of certain phalanges resulting in shortening of the fingers or their complete absence. A case is quoted by Sedgewick in which this was traced through the female line for ten generations. Ogle described in 1872 a case in which the first and second fingers and the second and third toes had only two phalanges, whilst the third and fourth fingers and the fourth and fifth toes had each only one phalanx. He traced this defect through three generations and through collaterals living in distant places, at Manchester and Lincoln. Tubby has published particulars of a family in which the feet were like lobster claws, the three central toes being suppressed, whilst the hands had each only one finger, the fifth. He traced this deformity through four generations and, in spite of the admixture of new blood, 15 out of 22 descendants were deformed. Many other defects and deformities which are hereditary I have only time to mention. Congenital dislocation of the hip has been transmitted through four generations. Absence of the patella has been noted in three successive generations. Webbing of the toes and fingers has been traced through three and four generations. Club-foot is often hereditary; so are hare-lip and cleft palate. In respect of this deformity it is interesting to note how a slight defect in one generation may foreshadow a more serious abnormality in a succeeding generation.

In the Transactions of the Clinical Society for 1888 will be found a paper in which I showed that a congenital absence of the lateral incisor tooth was an indication that a hare-lip or cleft palate in the same plane might follow in a successive generation. I now for the first time make public a further observation in relation to this deformity. It is that a feebly developed lateral incisor on one side in the mother may foreshadow a hare-lip and cleft palate in her offspring. I have twice noted this association and I exhibit to the society a photograph and drawing of the teeth of a mother, showing this defective lateral incisor, whose first and only child has hare-lip. Hare-lip and cleft palate are frequently associated with other deformities which apparently present no causative relation. I mentioned that in the family with supernumerary fingers and toes which I recorded hare-lip and cleft palate had also appeared in the later generations. Roux has recorded a similar association. Cooper Forster recorded particulars of a family in which imperforate anus was associated in several instances with hare-lip and cleft palate.

Our Transactions already contain several instances of multiple congenital deformities. In the first volume Carpenter relates the histories of two sisters who presented many abnormalities and were of weak mental capacity. Each had a keel-shaped skull, congenital heart disease, abdominal ruptures, webbed fingers, and six toes on each foot. Jackson Clarke describes a case of absence of the radius causing club-hand associated with macrostoma. In the second volume Hutchison and Sutherland each relate a case of multiple deformities of almost identical characters. Two boys, one aged 13 months and the other two years, presented the following abnormalities in common: (1) congenital heart disease; (2) rudimentary hare-lip; (3) six digits on each hand; (4) shortening of all the long bones of the extremities; and (5) defective development of the gums. The shortening of the limbs and the spreading of the fingers and toes resembled cases described as achondroplasia, but other defects were superadded and Shuttleworth thought that their intellects were defective. In the third volume Lewis Marshall gives particulars of a family at Nottingham in which truncated fingers and toes had occurred for five generations and in some of those affected double or supernumerary thumbs had been noticed. This family defect so closely resembles that described by Ogle in 1872 that one is almost inclined to think that some of the same family which Ogle found in London, Manchester, and Lincoln had found their way to Nottingham. I have not time more than to mention the tendency of partial hypospadias to be reproduced or exaggerated in succeeding generations. Hernia, varicocele, and varicose veins are often found hereditary, so is atrophy of one testis.

I wish now to make a few remarks on constrictions and so-called intra-uterine amputations, as they probably are closely related in cause and effect. The remarkable case shown at the Clifton meeting of this society by Mr. H. E. Harris, in which there were complete absence of both lower limbs and of the left upper extremity and webbed fingers on the hand of the only limb remaining, will sufficiently illustrate intra-uterine amputations; and the no less remarkable case of deep encircling constriction of the abdomen associated with a depressed furrow above the left knee published by Dr. C. O. Hawthorne in the third volume of our reports and in THE LANCET,[5] and another shown by Mr. H. J. Curtis of multiple dimpling and grooving of the surface associated with club-feet will illustrate the simpler condition. The most generally received explanation of those constrictions and amputations is that they are caused by the umbilical cord. I am inclined to think that there is little more to be said in favour of the constricting funis theory of intra-uterine amputation than there is for maternal impressions which I will not waste the time of the society by arguing against. If the funis were so tightly wound round a limb as to cause amputation surely the counter pressure on the cord itself would stop the whole fœtal circulation and kill the fœtus. Again, if the funis ever causes amputation, considering the extreme frequency with which it is found round the neck of the newly born child amputation of the head would be one of the most common of the intra-uterine amputations. Then taking Harris's case, is it likely that a cord could first amputate both lower extremities at the hip-joint and then proceed to amputate one upper extremity at the shoulder-joint? The number and the level of these three amputations completely dispose of the theory. If the funis amputated one it would thereby be so relaxed as to lose its constricting influence on the others. Even supposing it possible, the webbed fingers on the only limb still remain to be explained. Then what of the amputated fingers and toes? Will the funis in any way account for the loss of eight fingers and eight toes? Or, could it pick out the three central toes and take off the thumb and three first fingers of each hand as in Tubby's [illegible] cicatrix at [illegible] be caused by [illegible] that the constriction is below the level of the umbilicus and does not run up to it as one would expect if caused by the funis. The grooving of the thigh and the double grooving over the loins to me suggest the probability of a general condition rather than the mechanical effect of the cord. Curtis's case is accounted for on the additional theory of amniotic adhesions of which there is no evidence. The multiple dimplings and grooves are probably to be accounted for by errors in development similar to those which caused the clubbed feet, present in that case.

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[5] THE LANCET, August 8th, 1903, p 374.

I[illegible] ca[illegible] [illegible]mence in a family and then cling tenaciously to subsequent offspring in spite of fresh blood being added at every generation? They seem to suggest a defect very far back in the procreative process and the frequency of many associated defects implies something very general. An incompatibility of germ and sperm cell, such as produces hybrid deformities in plants, appears to me a not unreasonable hypothesis as the cause of defects dating back to the earliest stage in development

Next to this, considering the vast number of deformities which are associated with defects in the nervous system, as in many of the cases I have mentioned in illustration, a defective nerve control will be a sufficient explanation of many defects occurring at a later period. Morphœa or scleroderma is often symmetrical and by many is thought to be governed by nervous distribution. Such a condition, to my mind, offers a better explanation of intra-uterine amputations than any mechanical one of the cord. There is yet another way in which suppression of an extremity might be accounted for—that is, by supposing a cutting off of the blood-supply through an endarteritis similar to the endocarditis which often [illegible] cause of congenital h[illegible] e artery by embolus, bu[illegible] n [illegible] or the associated deformities such as webbed fingers and the like.

The most difficult of all deformities to account for are those in which there is an excess of the normal development, as with supernumerary digits, if Darwin's reversion theory be not accepted, but the frequent association of these with lack of completion in other parts indicates a general failure of control in the developmental process. Many defects, such as hypospadias, imperforate anus, and cleft palate and hare-lip, are due to a failure to complete the normal process, which a lack of nourishment may to some extent account for. This was almost proved to be the cause of the lion cubs in the Zoological Gardens being born with cleft palates, for with a more liberal and appropriate diet cubs were born normal. But what it is very important to bear in mind is that a defect in development once established is very difficult to eradicate from succeeding generatio[illegible] then com[illegible] [illegible]*anny of the ancestor* from his [illegible] ery desire to escape [illegible] Happily the other side of th[illegible] that a vigorous and manly constitution with high intellectual qualities may be transmitted if the parents do not transgress the laws of mental, moral, and physical hygiene. Physical deterioration, with which mental degeneration almost certainly becomes associated, rests on two factors; the defective health of the parents and the unhealthy surroundings and deficient food of the offspring. Of these two factors the parents exert the greater influence, because in them is summed up not only the result of their own unhealthy lives but that of their ancestors. Much, no doubt, can be done for the child by good food, good air, and mental and moral training, but he must carry the *tyranny of his type* to the end of his days. The Shetland pony, stunted by centuries of bad feeding, cannot in a generation be converted into either a race horse for speed or into a shire horse for draught. The regeneration will be gradual however desirous we may be to hasten it. But to the two ends indicated—to inculcate the laws of health among parents and to secure good food, air, and mental and physical training for the child—to these ends philanthropy may well be directed.

The Croonian Lectures

ON

BRIGHT'S DISEASE AND ITS VARIETIES

Delivered before the Royal College of Physicians of London on June 7th, 9th, 14th, and 16th, 1904,

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LECTURE III.[1]

Delivered on June 14th.

NEPHRITIS AND ACUTE BRIGHT'S DISEASE.

MR. PRESIDENT AND GENTLEMEN,—It will be seen from the consideration of the facts brought forward in the second lecture that the tendency of recent experimental work is to enlarge considerably the range of action of renal poisons and to suggest that nephritis and Bright's disease are probably in the great bulk of instances of toxic origin, although it must be admitted that at the present time there is no very definite evidence in all instances as to the nature of the toxic agent.

We are, perhaps, justified in considering that the toxic substance producing renal disease in the human subject may be divided more or less arbitrarily into three groups. The first, and on the whole perhaps the most important, consists of the toxic substances which are presumably formed in the course of febrile illnesses and more especially in acute specific diseases. Secondly, the toxic substances ingested, of which the most notable instances are, on the one hand, alcohol and, on the other hand, lead. Thirdly, it is possible that substances having a deleterious action on the kidney may be produced as a result of altered metabolism. The poison of gout is, of course, the most marked instance of this although it is difficult to be certain as to this since it is quite possible that the renal changes in this disease may really be dependent on the action of some poison that is ingested.

The relation of nephritis to acute infective diseases is so well known that only some of the points of interest need be touched upon. It would seem that the severity of the renal lesion is not in any way necessarily related to the severity of the specific infection and this is especially seen in the case of scarlet fever, where the most severe nephritis may occasionally follow an attack of scarlet fever so slight as to have been scarcely recognisable. This fact, which is well recognised as regards scarlatinal nephritis, is also to be seen in the case of other forms of infective disease and it is especially important to recognise it in the case of syphilis. Nephritis owing its origin to syphilitic infection is probably more common than is usually supposed and certainly some of the most severe forms of the disease may occur in cases where the syphilitic manifestations have not been unduly severe. Personally I think it is probable that some forms of so-called idiopathic Bright's disease or nephritis frequently attributed to the action of cold are really dependent on the action of syphilis. It is not uncommon to see well-marked Bright's disease in the first two years after syphilitic infection where the real etiology of the disease may perhaps be discovered quite accidentally, [illegible] a syphilitic rash slight [illegible] presents in some respects [illegible]ered more in detail later.

The only point I wish to insist upon at present is that the virus of this disease, just like that of other acute specific diseases, is capable of producing a profound nephritis characterised amongst other things by a very profuse albuminuria and in my opinion this malady accounts for some of the cases of Bright's disease seen in young adults and attributed to cold owing to the absence of a history of the occurrence of the more usual acute specific infections giving rise to nephritis. Although the action of toxic agents whether ingested or produced through the agency of acute specific infections is probably the most important cause of nephritis and Bright's disease there are in addition various other subsidiary causes which may be of interest and of importance. Thus age and sex play a part, the disease being one more prevalent in the young and in the male. But here it is difficult to appreciate accurately how much is dependent on real sexual differences and how much on sex affording a greater opportunity for the action of these poisons, as, for instance, in the cases of lead, syphilis, and alcohol. As regards age, however, there can be little doubt that the form assumed by the renal disease is to a considerable extent influenced by age and it may be said, speaking broadly, that some of the most severe forms of true Bright's disease are essential diseases seen in the young. Another subsidiary cause or influence that is occasionally seen is the occurrence of the disease in several members of the same family and the disease has even been observed affecting several members of the same family in childhood. Instances have been quoted where several children have suffered with granular kidney and it has been suggested that in some of these the malady may really be due to a specific taint. One of the most interesting conditions associated with Bright's disease is the fact that this malady not uncommonly affects kidneys which are congenitally malformed. Several instances of this have fallen under my observation. This, although of no clinical importance, is of some pathological interest.

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[1] Lectures I. and II. were published in THE LANCET of July 16th (p. 125) and 23rd (p. 191), 1904, respectively.

One of the principal problems in connexion with this subject is the differentiation of the different forms of nephritis and of Bright's disease. Many writers look upon nephritis and Bright's disease as more or less synonymous terms and not a few advocate the giving up of the term Bright's disease and suggest that all forms of so-called inflammatory renal disease should be classified under the term of nephritis, the various forms of the affection receiving other clinical names, such as acute or chronic, or else pathological designations, such as tubular or interstitial. The term Bright's disease was applied, of course, in recognition of Bright's great discovery that certain forms of albuminuria associated with dropsy were accompanied by gross structural lesions in the kidney and if his name be applied to all the conditions in which albuminuria, dropsy, and gross structural lesions are found the number of diseases which must be included under the term of Bright's disease is necessarily very considerable. It would include, not only various forms of what are spoken of by many pathologists as acute and chronic nephritis, but it would also include such conditions as waxy degeneration, the true granular kidney, and might even be stretched to include such conditions as the cystic kidney or the congenital cystic kidney. It is obviously inconvenient to include such widely different pathological processes as those producing the so-called large white kidney and those producing a red granular kidney and the amyloid or cystic kidney all under one term of Bright's disease. This is inconvenient, not only owing to the difference in the etiology of the conditions, but really much more so owing to the profound difference in the clinical course of the different maladies and it renders all progress in attempting to associate given symptoms with certain lesions very difficult. On the other hand, to give up the term of Bright's disease and simply to speak of its various forms as some one or other variety of nephritis, acute, chronic, tubular, interstitial, &c., is similarly inconvenient owing to the profound differences which exist between the different forms of acute nephritis.

It matters little what names we apply to these conditions provided we recognise that there are a great number of different lesions with a more or less distinct group of symptoms and a distinct natural history, but to group all these different inflammatory affections of the kidney under the term nephritis is to produce as much confusion as that existing at the present time owing to the tendency of many writers to talk of all kidneys as granular kidneys the surface of which presents a granular appearance. No doubt in one sense these kidneys are granular, but to include in one group the roughly granular kidney seen in the young adult where the kidney is small, mottled, or even white, the urine abundant and loaded with albumin, with that seen in a middle-aged or elderly man where the kidney is red, finely granular, often associated with profound arterial lesions and where the albuminuria is slight or even absent produces only confusion. It is doubtless difficult and perhaps impossible to draw a hard-and-fast line between nephritis and Bright's disease, although it is not difficult to separate the more extreme varieties of these affections. At first sight it might seem that the severity of the effects produced by the lesion might be used as a criterion of distinction, using the term nephritis for the more trivial acute affections and the term acute Bright's disease for the more severe. This, however, is unsound from a pathological point of view and also from a clinical standpoint, inasmuch as cases of extreme severity and even causing death may be included under the description of nephritis rather than of Bright's disease, as some of the more conspicuous symptoms of the latter illness may be absent.

The term Bright's disease, as stated above, was originally employed to characterise a condition in which urinary and renal changes were associated with the presence of dropsy and it would seem on the whole, although not an irreproachable classification, that the most satisfactory way out of the difficulty would be to restrict the term nephritis to certain conditions running an acute course in which although renal lesions and urinary changes are present yet dropsy is absent. Doubtless a very considerable number of different renal lesions of varying degrees of severity would be included under this one common heading, but this is more or less inevitable whatever system of classification is adopted. The term acute Bright's disease might on the other hand be applied to the condition where along with renal and urinary changes dropsy is present. As long as one's attention is restricted to the consideration of acute renal lesions this classification is on the whole satisfactory, as every physician must recognise that there are, broadly speaking, two groups of cases of acute inflammatory affections of the kidney, one where all the physical signs and symptoms are, so to say, urinary and the disease reveals itself merely by an alteration in the nature of the urine, and the other where along with the urinary changes dropsy is present.

It has been argued, and may doubtless still be argued, that the separation into these two groups is more or less artificial, inasmuch as the etiology is very often if not identical at any rate similar; and many writers, if not most, dealing with the subject, although recognising the two conditions, have looked upon the one as merely a more serious or extensive or advanced form of the other. In other words, they have recognised that nephritis may be, so to say, of slight severity and unaccompanied with such a phenomenon as dropsy, or, on the other hand, that it may be severe and dropsy a marked feature. Some authors have been so influenced by this consideration as to be inclined to drop the term acute Bright's disease and to speak of all those acute renal affections as acute nephritis, retaining the word Bright's disease as a distinctive term for certain forms of so-called chronic nephritis. It is probably, as I have already mentioned, of but little importance what names we give to these conditions provided that we recognise the existence of these two definite forms of disease.

Many writers, as I have just stated, look upon the form of nephritis accompanied by dropsy as merely a more serious variety of acute nephritis. This, however, is a view which cannot be accepted either on experimental or on clinical grounds. It is doubtless true that where dropsy occurs as an accompaniment of acute renal inflammation the quantity of urine is greatly diminished, but neither experimental pathology nor clinical medicine affords any support to the view that the occurrence of the dropsy is dependent merely on the diminution in the renal secretion. The renal function may be suppressed experimentally, as we have seen, by removal of the kidneys, by ligature of the renal arteries, by ligature of the ureters, or by injection of toxic agents causing destruction of the renal tissues. In none of these conditions, although the flow of urine is necessarily completely arrested, does dropsy occur. These results are cogent enough, but still more conclusive evidence pointing in the same direction may be obtained by the study of the results of disease clinically. There are a number of conditions in which life may be maintained for a week or ten days, notwithstanding the complete suppression of urine. In none of these is dropsy a marked phenomenon; in most of them it does not occur at all, and where it does occur it is quite different from the dropsy with which we are familiar at the onset of acute Bright's disease. In acute Bright's disease dropsy may be the first sign and it is always an early one. In complete suppression of urine dependent on calculous obstruction life may be maintained for some ten days and dropsy may be completely absent or at the most in a few rare instances slight pitting has been observed towards the end. This affords a great contrast to the rapid anasarca that develops at the onset of acute Bright's disease and may almost in a few hours, or at any rate in a few days, render a patient unrecognisable In a number of other conditions—as, for instance, thrombosis of the renal arteries or complete suppression of urine from reflex causes—dropsy is similarly absent notwithstanding that life may be prolonged for a *period similar to that seen in calculous obstruction*

The consideration of the urinary changes produced in these diseases will, at any rate, show that the occurrence of dropsy cannot be correlated to the mere suppression of the urinary function. But much stronger evidence than this is obtained from the study of other renal diseases Thus, in the latter stages of congenital cystic kidney it is no uncommon thing for the flow of urine to be diminished very greatly, although perhaps complete suppression is not usual. Yet even in this malady dropsy at all resembling that seen in acute Bright's disease may be said to be unknown, although it is true that in a few isolated instances slight pitting of the skin has been observed

The most conclusive reason, in my opinion, for separating cases of acute Bright's disease from cases of acute nephritis rests in the fact that the occurrence of dropsy even in this disease cannot be [illegible] the inflammatory chang[illegible] true that most cases of [illegible] e of, or as a sequel to, a [illegible] dropsy is absent are slight as shown by the alterations in the composition of the urine yet it is absolutely certain that the most intense nephritis may exist without the occurrence of dropsy Thus the urine may be greatly diminished in amount, loaded with albumin, and loaded with blood, presenting therefore all the pictures of an intense acute nephritis, as severe as any seen in acute Bright's disease, and yet dropsy may be absent We may even go further than this, inasmuch as cases of acute inflammation of the kidney may be seen where after a short period during which the urine is loaded with blood and albumin the secretion becomes more and more scanty and finally suppressed and the patient dies with uræmic manifestations and yet dropsy may be absent We see from the consideration of these facts that neither from the experimental nor from the clinical side is there any substantial evidence that the occurrence of dropsy is to be looked upon as dependent on a mere suppression of the urinary excretion Further, what is more important from our present point of view, acute inflammatory affections of the kidney of the highest degree of severity may exist without the occurrence of dropsy, although even in the fatal cases the duration of life is such that it cannot be asserted that the patients have died too soon for the dropsy to manifest itself One of the specimens of acute nephritis on the table is that of a patient who lived ten days after the onset of symptoms and where complete suppression may be said to have been present, as less than ten ounces of urine were passed during the whole of this period, yet dropsy was absent notwithstanding the intense character of the nephritis I think the conclusion is justified that the occurrence of dropsy cannot be correlated either with the mere suppression of the urinary excretion or with the virulence of the inflammatory changes in the kidney

When we turn to the consideration of the cases of acute *Bright's disease—that is to say the cases of acute inflammatory* renal changes associated with the presence of dropsy—we meet with facts which bear out the same conclusion, as it is quite common to see cases of acute Bright's disease where the dropsy and the general effects produced by the malady may reach a high degree of severity and yet the urinary changes, although well marked and acute, are not necessarily as severe, as measured by the amount of blood and the amount of albumin or even the diminution in the amount of urine, as those seen in the more severe forms of nephritis unaccompanied by dropsy

We have hitherto been considering clinical facts and probably the only difference of opinion amongst different observers would be as to the names to be applied to these two conditions When, however, we attempt to explain the differences between these two great groups of cases we are dealing mainly, at any rate, with theory, but that there are two great groups of acute inflammatory affections of the kidney, one associated with dropsy and one without, must be, I think, regarded as proved We cannot for the reasons advanced above look upon the one as merely a more serious form or development of the other. What is the explanation of the occurrence of [illegible] its absence in the other? [illegible] lue to the mere suppressi[illegible] low and it might be quite [illegible] in the urinary flow as rather the result of the dropsy than its cause, since undoubtedly under certain conditions very acute nephritis may exist without any diminution in the urinary flow Thus acute nephritis may occur as a complication of diabetes and the urine be loaded with albumin and blood and the kidney present the changes characteristic of acute nephritis, and yet the flow of urine may be maintained at the high level characteristic of diabetes This is certainly remarkable as showing that an intensely inflamed kidney may yet be able to excrete very large quantities of urine and makes one hesitate as regards always attributing the diminution in the flow of urine seen in acute Bright's disease to the changes in the kidney On the other hand it is, of course, undoubted, as acute nephritis shows, that usually acute inflammation of the kidney does cause a diminution in the flow of urine A tempting hypothesis is, of course, the well known one that in Bright's disease we have to deal with a toxic substance circulating in the blood and that this produces not only changes in the kidney but also changes in the vessels at large allowing of th[illegible] it would seem at the present [illegible] although by no means proved, [illegible] s we have to deal with a renal poison pure and simple, but in that form of acute nephritis associated with dropsy to which the term acute Bright's disease is applicable a different poison is present affecting not only the kidney but the vessels generally There is unfortunately no direct evidence in support of such a view as this, although there are a number of substances the injection of which may be followed by the production of dropsy These so called lymphagogues show, at any rate, that dropsy may be produced as a result of the presence of abnormal substances in the blood Still, no such substance has as yet been obtained from the blood, the tissues, or the urine in Bright's disease Although the mere arrest or diminution in the urinary excretion is not of itself capable of producing dropsy, yet it is probable that the hydræmic condition brought about as a result of partial or complete suppression of urinary secretion may play a part in the production of dropsy and there is a certain amount of experimental evidence in support of this

Ligature of the ureters in animals, as has been stated already more than once, is not followed by the production of any dropsy Further the injection of considerable quantities of normal saline solution into the general blood stream, although producing a condition of hydræmia, is also not followed by the production of any dropsy If, however, these two procedures are carried out in the same animal ascites is liable to be produced The most marked ascites is produced if after ligature of the ureters through a small incision in the abdominal wall a *moderate venesection is made and this is* followed by the transfusion of normal saline solution A condition of hydræmic plethora may be produced in this way and it would seem that either the peritoneal vessels are normally more permeable than those of other parts of the body or possibly that the condition of the peritoneal vessels has been modified in some obscure way as a result of the operative procedures necessary in order to ligature the *ureters It has not* been possible, however, in the laboratory to reproduce anything comparable to general renal dropsy such as is seen clinically in cases of acute Bright's disease

Notwithstanding the separation of these cases of inflammation of the kidney accompanied by general dropsy from those where the inflammatory lesion produces only effects in the composition of the urine, the number of cases included in the latter group is still very large, and such cases present all degrees of severity from a mere passing or transitory albuminuria to those where complete suppression of urine is followed by death from uræmia It is difficult, if not impossible, to classify these various forms of nephritis in a satisfactory manner, but at any rate one group is more or less sharply separated from the others This is the group where the nephritis occurs during the course of acute febrile diseases and corresponds to what used to be spoken of as febrile albuminuria, but perhaps the name given by French authors to this condition—viz, of transitory nephritis—is more satisfactory The main points of interest attached to this condition are, first, that it is not in any way one immediately serious although it frequently occurs as a complication in the very same acute specific diseases—such as scarlet fever, pneumonia, &c.—which may give rise to the more serious forms of acute nephritis or even to acute Bright's disease. Secondly, the condition is a purely temporary one seen during the height of the febrile disorder and subsiding with it and presumably dependent on the action on the kidney of the toxic agents or toxins elaborated by the morbid process causing the original disease. Further, in many instances the lesions produced in the kidney are not uniform in their distribution but, on the contrary, are disseminated and patchy and therefore partial in their distribution. The degree of development of this transitory nephritis varies enormously in different acute febrile diseases and even in the same disease in different circumstances and unquestionably it is a condition of little or no clinical importance at the moment and, as just stated, it commonly subsides with the subsidence of the febrile disorder. One of the great difficulties as regards the pathology of the serious chronic forms of Bright's disease lies in the fact as to whether this transitory nephritis may or may not lay the foundation of a subsequent progressive lesion of the kidneys. Such an origin certainly cannot be excluded, as it is no uncommon thing to see patients with the most advanced chronic Bright's disease which has run a latent course for many years and the etiology of which is most obscure, and it is, of course, possible that some of these cases may really owe their origin to an attack of nephritis accompanying an acute specific which has produced renal changes and has either been entirely overlooked or else forgotten by the patient.

Another point of interest with reference to these cases of slight nephritis occurring as the accompaniment of acute febrile diseases is the question whether some of the cases of trivial or even of so-called functional albuminuria may not really be due to a slight lesion produced in the kidney by some such inflammatory affection, although other factors must also be at work and the most important of these is probably a functional disturbance of the vaso-motor system. In transitory nephritis or febrile albuminuria the lesion in the kidney is not only slight but, as already mentioned, may be partial in its distribution. It is, at any rate, conceivable that in such cases the glomeruli or the tubules may in some portions of the kidney be sufficiently damaged to allow of the passage of albumin permanently and I cannot help thinking that in some of the cases of slight albuminuria where there is no reason to suppose the presence of a granular kidney some such mechanism as this is at work. In other words, the albuminuria although persistent may not be the sign of a chronic and progressive disease but the relic, so to say, of a former attack of acute nephritis of slight severity, partial in its distribution and of no great clinical importance. We are rather prone to look upon persistent albuminuria as a sign of chronic progressive disease and yet large numbers of patients may suffer from albuminuria for long periods without any very noticeable impairment of their general health. It is possible that in these cases the albuminuria is to be attributed rather to a partial and non-progressive lesion. A similar lesion may, perhaps, also be the cause of some of the so-called functional albuminuria. Although transitory nephritis is more or less sharply marked off from the other varieties the latter are very difficult to classify, inasmuch as all grades of severity are seen. They may, of course, be divided up into glomerular, tubular, and interstitial according to the predominance of the lesion in one or another of these structures, or, on the other hand, they may be classified etiologically according to the agent causing them. Some of the varieties, as for instance that seen perhaps as a result of influenza, are remarkable owing to the amount of hæmaturia which may be present; others, as in scarlet fever, are characterised by the very great diminution in the amount of urine excreted and it is no uncommon phenomenon for complete suppression to occur. In the severe forms associated with more or less complete suppression uræmic phenomena are always prominent and they usually take the form of the more acute manifestations of uræmia, such as vomiting, drowsiness, coma, and convulsions. Epileptiform seizures are probably more frequently seen in the uræmia accompanying severe and fatal acute nephritis than in that seen in the other forms of renal disease with, of course, the exception of eclampsia. The frequency of epileptiform seizures in severe nephritis may perhaps be due to the variety of the disease or nature of the poison, but, on the other hand, it must not be forgotten that many of these cases occur in children and such young patients of course are more liable to epileptiform seizures in a variety of circumstances than adults.

Although the uræmic symptoms seen in acute nephritis are most frequently of the acute or even of the fulminating order, in exceptional instances a clinical picture resembling that of latent uræmia may be seen. A most remarkable instance of this is afforded by the case where acute interstitial nephritis of unknown origin occurred in a girl aged 11 years, causing complete suppression, and where the symptoms presented were practically indistinguishable from those seen in complete calculous anuria. The lesion in this case, although annulling the functions of the kidney, was really an acute interstitial nephritis, the interstitial tissue being gorged with blood and containing innumerable disseminated foci of commencing suppuration. This patient, as already mentioned, lived ten days from the onset of symptoms and during that time passed less than ten ounces of urine. It is possible that the difference in the character of the uræmic symptoms from that most usually seen in acute nephritis is dependent on the lesion being one affecting the interstitial tissue and this case affords further support to the view already advanced that where the excretory functions of the kidney are suddenly arrested, the kidney having been previously healthy, the uræmia produced is of the character known as latent uræmia and that it is only where uræmia supervenes as a result of acute or chronic disease of the renal elements themselves that the more usual acute or chronic uræmia is seen. This is a point of considerable importance to the surgeon especially, inasmuch as there is a tendency to associate the clinical picture of latent uræmia exclusively with obstructive suppression, but it is unquestionable that precisely the same symptoms may be produced where the functions of the kidney are arrested owing to acute disease of the kidney.

It is probable that syphilis plays a considerable part in the production of nephritis and it would also seem that in some instances the nephritis presents peculiar features, thanks to which the probability of it being of specific origin can be surmised. Syphilis differs from other acute specific infections in that it causes a greater variety of lesions in the kidney. Thus it has long been recognised that gummata and waxy degeneration of the organ are liable to occur during the later stages of syphilitic infection. But putting all such cases aside there can be little doubt that a syphilitic nephritis occurs not infrequently in the first two years following specific infection. Patoir[2] showed that the examination of the urine at the onset of secondary symptoms in syphilis revealed the presence of albumin. This albuminuria resembled in many respects that seen in the course of other infective diseases. Very commonly no other symptoms of nephritis were present and the amount of albumin was small. This author considers that in syphilis the urinary secretion tends to become more active and that the quantity and the density of the urine may increase but curiously enough at the moment of the outbreak of the syphilitic manifestations the toxicity of the urine may be diminished and he thinks that in young subjects there is, at any rate, an increased activity of nutrition and that the changes in the urine are mainly dependent on this. In addition to these more or less trivial disturbances in the function of the kidney cases are seen where nephritis of a considerable degree of severity occurred during the incidence or during the convalescence of syphilis. Cases of nephritis are not infrequently seen occurring during the secondary stage of syphilis which are often attributed to the action of cold. It was at one time thought that these more severe cases of nephritis seen during the course of syphilis were really dependent on the large doses of mercury that had been employed in the treatment. But this is not the case, as several instances have been recorded where the nephritis has supervened in patients who have not been systematically treated with mercury.

Delamare[3] considers that where nephritis complicates secondary syphilis the renal lesion is either acute or subacute and there is a certain resemblance between the nephritis of syphilis and that seen complicating scarlet fever. Two cases of syphilitic nephritis have fallen under my observation, one in a young man and the other in a middle-aged woman. In both cases the renal lesion developed during the first year following infection and in both cases it was of a severe form.

Syphilitic nephritis is difficult to distinguish from other forms of nephritis, but there are one or two features as to the clinical course of the disease which may suggest its origin apart from the history of recent infection In the first place, the amount of albumin present in the urine is usually very large, the urine becoming solid on boiling Notwithstanding the very large amount of albumin present the quantity of urine is not so much diminished as in many other forms of nephritis In the instances which have fallen under my own observation blood has been absent Notwithstanding the very large amount of albumin casts are not very abundant and casts consisting of definite renal elements are extraordinarily scanty The patient often does not present any marked phenomena of illness or any marked physical signs other than the presence of a large amount of albumin Thus dropsy may be completely absent Delamare has drawn attention to the fact that one of the characteristic features of the condition is that a milk diet produces very little improvement and no material diminution in the amount of albumin The albuminuria often persists for many months and in one of the cases under my own observation it lasted for over six months but ultimately cleared up absolutely In other cases uræmic symptoms developed and these are necessarily of a more severe type and may be fatal In one case that I have seen death occurred not so much from uræmia as from cardiac dilatation Dropsy is not always absent but where it is present the cases are more or less indistinguishable clinically from other forms of acute or subacute Bright's disease The prognosis of syphilitic nephritis is most uncertain but it would seem that, notwithstanding certain theoretical objections, the treatment of these cases by antisyphilitic remedies is necessary and that mercury should not be withheld owing to any fear of the toxic action of the substance on the kidney In some respects the clinical picture produced by syphilitic nephritis is somewhat similar to that seen in amyloid disease, and of course this affection is not an uncommon accompaniment or sequel of syphilitic infection Still, the differential diagnosis can usually be made owing to the different period in the course of syphilis in which syphilitic nephritis and amyloid degeneration are respectively liable to occur It is important to recognise syphilitic nephritis, as very considerable benefit may often be derived from its early recognition and prompt treatment with antisyphilitic remedies

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[2] Patoir: Archives Générales de Médecine, 1901, p. 385.

[3] Gazette des Hôpitaux, 1900.

THE

RED LIGHT TREATMENT OF SMALL-POX

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THE treatment of small-pox by red light was recommended to the profession some 12 years ago by Dr Finsen of Copenhagen Since that time it has been tried in several places and has, we believe, come into general use in the Scandinavian countries In this country, however, the treatment has not become established In the course of last year we had an opportunity of testing its value and we were not favourably impressed by it. We think it worth while to publish our results to justify the apparent neglect of a remedy reputed to be of so much value

In a recent article[1] Dr Finsen has expressed his views in very emphatic language and there and elsewhere has laid down very clearly and definitely what his remedy is claimed to accomplish It is not a remedy for small-pox but only for the suppuration which attends it And Dr. Finsen does not claim that its effect is merely to ameliorate the suppurative condition and its consequences, but that it absolutely prevents it He says: "Suppuration will generally not occur and the patients will recover without scars or only with almost invisible cicatrices"[2] "That suppuration is due to light, especially to the blue violet and ultra-violet rays, and may with certainty be avoided if these rays are kept off .. .. rests on a fact established by practical experience."[3] "It may be considered as an irrefutable fact that it is possible to avoid the suppuration and its consequences by protecting the patients from the action of light."[4] "The greatest number of deaths are due to suppuration which, *cæteris paribus*, would be prevented if no suppuration were present Further, the numerous complications and sequelæ due to suppuration may be avoided as well as the disfiguring pitting"[5] "Even in cases of confluent small-pox or in unvaccinated persons the method very rarely fails, supposing, of course, that the patient comes under treatment early enough"[6] There is a suspicious moderation about the last statement Truly, if the remedy fails in confluent small-pox or in unvaccinated persons we shall be better off without it We have not, however, so limited our selection and we think that we are entitled to hold that if in a reasonable number of cases in which the necessary conditions have been fulfilled suppuration and its consequences are shown to be the rule the case for red light, so stated, falls to the ground

Our experience was limited to 13 cases As we were convinced that these patients derived no benefit from the treatment we did not, for reasons which will appear later, consider that we were justified in proceeding further The ward in which they were treated was a small one containing four beds It had six windows, all of which were blocked by a double layer of photographic "ruby" fabric There were two doors, over each of which was hung a curtain made of a double thickness of red "Turkey twill" The doors opened into lobbies and an area round each door was screened off with a double thickness of the same material, so that on passing through the door and under the door curtain one found oneself in a small chamber completely shut in with red curtains One passed again through a second curtain to reach the light The effect of this arrangement was that persons entering or leaving the ward admitted no white light when raising the curtains A few other apertures in the ward through which a dim light penetrated were also screened off with ruby fabric In fact, the ward was converted into a photographic dark room and perhaps we used an excess of caution in our arrangements No candles or naked flames were used at night Artificial light was obtained by the use of dark room lamps with red glass

Fifteen patients were at different times admitted to the ward One of these had an attack of discrete small-pox of the mildest description and was, in fact, taken to the ward by inadvertence Another patient died from heart failure the day following his admission, for which reason his case also may be excluded There remain 13 cases in which the patient was treated in red light throughout the period of suppuration Five were vaccinated, six were unvaccinated, one patient had been vaccinated only in the period of incubation, and in one case the matter was doubtful Four were cases of discrete and nine of confluent small pox The mildest was one of discrete small-pox of a very moderate type of severity and at the other extreme was one of very severe confluent small pox The other cases ranged between these two extremes Two of the patients died, both during the fever of suppuration In neither case was there any complication to which the fatal result could be attributed. Details of the cases are given in the table

Suppuration —What precisely is to be understood by the statement that suppuration is prevented by the red light treatment? For the statement may imply either of two very different trains of events It may mean that the vesicles, even in cases of unmodified small-pox, fail to maturate Or it may mean that as the result of the treatment cases of unmodified small pox do not occur but are resolved into cases of modified small pox where suppuration is at a minimum The fact that suppuration is imperfect is by no means the only peculiarity of modified small-pox If suppuration is imperfect so is vesiculation and so may be the formation of papules The essence of the thing is that an idiosyncrasy of the individual (sometimes natural, more often acquired) so increases the capacity to resist the action of the virus in the skin that processes of repair predominate over processes of destruction In consequence there is a change in the whole course of development of the lesions which differ in their size shape, and rapidity of development and not merely in the fact that suppuration is less in evidence Even in unmodified cases a certain number of lesions may be seen which are small and ill-defined And, on the contrary, in modified cases some large unmodified lesions may often be

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[1] Brit. Med Jour, June 6th, 1903.
[2] Phototherapy, by Niels R. Finsen p. 27.
[3] Brit. Med Jour, June 6th, 1903

[4] Ibid [5] Ibid. [6] Ibid

TABLE GIVING THE RESULTS OF THE RED LIGHT TREATMENT OF SMALL-POX IN 13 CASES.

No.	Sex.	Age.	Vaccination.	Type of disease.	Result.	Day of efflorescence on which patient entered red ward.	Condition of rash on admittance to red ward.	Duration of treatment by red light.	Highest temperature during secondary fever.	Development of eruption.	Complications and sequelæ.	Remarks.
1	M.	9	Not.	Mild discrete.	Recovered.	First.	Early papular.	8 days.	102° F.	Normal	Albuminuria.	—
2	M.	39	In infancy only.	Severe discrete.	"	Fourth.	Late papular and vesicular.	6 "	100°	"	—	—
3	M.	59	"	"	"	"	Papular and slightly vesicular.	9 "	101·4°	"	Septic ulceration of skin.	—
4	F.	11	Not.	"	"	Second.	Papular; partly vesicular on wrists and ankles.	11 "	101·2°	"	Slight delirium.	—
5	M.	35	At age of 20 only.	Confluent.	"	"	Vesicular.	9 "	Absent.	Modified.	Severe headache in secondary stage.	—
6	M.	39	In infancy only.	"	"	"	Early papular.	12 "	100·2°	Partially modified.	Delirium, septic ulceration, and boils.	—
7	M.	23	Not.	"	"	Third.	Papular with some early vesicles.	9 "	102°	Normal.	—	—
8	F.	4	Two days before efflorescence only.	"	"	Second.	Early papular.	13 "	103°	"	—	—
9	M.	2½	Not.	"	"	Third.	Papular.	15 "	104°	"	—	—
10	M.	3	"	"	Died on the eighth day of efflorescence.	Second.	"	5 "	102·6°	"	Ulcer of cornea, slight laryngitis, otorrhœa.	Died from secondary fever.
11	M.	30	Doubtful.	Severe confluent.	Recovered.	Third.	Papular.	17 "	103°	"	Alopecia, septic ulceration.	—
12	M.	40	In infancy only.	"	"	Second.	Early papular.	19 "	103·6°	"	Albuminuria, delirium, and boils.	—
13	F.	19	Not.	"	Died on the twelfth day of efflorescence.	"	Papular and early vesicular.	9 "	104°	"	Delirium.	Died from secondary fever. Exposed to daylight for about one minute on fifth day of efflorescence.

observed which suppurate as inevitably as they would in a case of unmodified small-pox. In fact, the same kind of lesion runs the same course whatever the nature of the case. Where cases differ is in the kind of lesion which is most plentifully developed.

If, therefore, treatment by red light has the effect of preventing the maturation of unmodified lesions that is an unnatural phenomenon which could hardly fail to be remarked. Certainly we did not remark it. The pustules in our cases were as large and as well developed as usual. In the red light, of course, their yellow colour was not apparent and the lesions had a fallacious appearance of remaining vesicular. We made a practice, however, of drawing off the contents and examining them by daylight and in Case 12, when the patient was taken into daylight to be photographed, we were able to satisfy ourselves that the pustules had developed normally.

If, on the other hand, we are to take it that this treatment has an effect similar to that of vaccination and causes what would otherwise be natural small-pox to assume a modified form then we must look only for an unusual frequency of modified cases. It is obvious that if great care be not taken to eliminate cases modified by vaccination or by a natural immunity it will be very easy to commit the error of mistaking an effect inevitable for one due to the treatment—an error to which many observers seem to have been prone. We realised our own danger in this respect, since the strain of disease existing in London last year was exceptionally benign and cases of all kinds showed an unusual tendency to exhibit modification. We were therefore at some pains to select cases which seemed likely to run an unmodified course. And in 11 cases out of the 13 our selection was justified. Two of our cases (No. 5 and No. 6) did exhibit modification, though one of them (No. 6) did so to only a partial degree. We attributed that result to our own defective judgment. It is, of course, open to anyone to suggest that the result was due rather to the treatment, just as it may be claimed that in the other 11 cases, with another form of treatment, the attacks would have been somewhat more severe. But such a modest claim is not what Dr. Finsen makes, not what we pretend to rebut, and not, we may add, what anyone has yet attempted to establish. Those "sequelæ due to suppuration" which the red light treatment is claimed to prevent, such as boils, ulceration, and the like, were very much in evidence in some of our cases.

Suppurative fever.—The presence or absence or the degree of suppuration are facts which can be described but not illustrated. The amount of suppurative fever can, however, be precisely recorded. The controversy as to whether or not suppuration is abolished or diminished by the red-light treatment appears to us to be beside the mark, since what matters is not the suppuration but its consequences—fever, scarring, and death. The fever of suppuration begins between the fourth and sixth day of efflorescence and any pyrexia occurring before that time may be ignored for our purpose. It will be seen that all the cases, with one exception, exhibited some rise of temperature. Secondary fever was absent in a case of modified confluent small-pox (Case 5). But suppression of the secondary fever is not an unusual occurrence in such cases. The fever was slight in some of the milder cases. In the more severe it was higher and in some it was considerable. It will be observed that in the mildest case, that, too, in which the treatment was begun earliest, the suppurative fever was rather pronounced. We are far from believing that the treatment had any effect in diminishing the suppurative fever in any of our cases.

Scarring —A good deal has been said about the effect of the treatment in preventing pitting from small-pox It may be worth while stating that with any rational treatment of small-pox scarring is absent in the majority of cases Pigmentation is commoner but it is not lasting It is chiefly *in severe and unmodified cases that scarring is pronounced* We certai [illegible] xceptionally favoured i [illegible] ered without scars and [illegible]

The time of inception of the treatment —To physicians in whose hands this treatment has failed it has been objected either that the exclusion of white light was im*perfect or that the treatment was not begun early enough* To the former objection it is certain that we have not laid ourselves open And with regard to the latter we may remark that if objection is to be made on this score then the treatment ceases to be applicable in a small-pox hospital. It does not appear, however, that those who have been more fortunate in their results have applied the treatment earlier Dr Finsen claims that suppuration *is prevented if the treatment* is begun before suppuration is imminent This condition was fulfilled in all our cases In most the eruption was either partly or wholly papular and in some the development of papules was still incomplete. The rate at which efflorescence and vesiculation proceed differs a good deal in different cases and we rejected cases in which vesiculation was advanced even though the patients were in an early stage of the illness counting by time As a rule the first sign of suppuration is to be noticed on the fifth day of efflorescence (about 96 hours after the first appearance of the papules). The majority of our cases came under treatment on the second or third day (24 or 48 hours after the beginning of efflorescence) In two cases only was the treatment delayed for 72 hours (till the [illegible] 1) it began within a [illegible] ie rash.

[illegible] has any of the merits which have been claimed for it Others observers who have tested it, as we have done, in selected cases, appear to have arrived at similar results So far back as 1893 Juhel-Renoy[7] submitted 12 patients to the treatment and found no evidence *in favour of it His unfortunate results were attributed by* Dr Finsen to an imperfect exclusion of light He does not specify on what grounds this criticism was based Indeed, Juhel-Renoy's methods seem to us to have been stricter than those adopted by some observers whose results Dr Finsen has approved. We suspect that it was the results which earned the criticism and the method which received the blame

We attach the more importance to Juhel-Renoy's results because he had a fairly extensive experience of small-pox, having treated 2000 cases Oettinger,[8] with a more limited experience (he had treated 250 cases), tested the treatment in eight selected cases of confluent and semi confluent small-pox. Three of the patients died. The five who recovered were all vaccinated Oettinger was of opinion that the *course of the eruption was modified in these cases and that* would probably be so, in some of them at any rate. But three of the five cases developed a marked secondary fever and most of them were scarred Oettinger, who gave the treatment a modified approval, admitted that in these respects his case [illegible] anish physicians [illegible] respect of scarring, [illegible] so well under a different treatment, no one, particularly no one with Oettinger's limited experience, could possibly determine beforehand how much fever and scarring to expect. It is enough for our purpose to point out that he did not prevent that train of events—fever, scarring, and death—which the treatment is reputed to avoid

We may also refer to two case [illegible] Philadelphia *One patient had* [illegible] suppurative fever and died Th [illegible] badly scarred It is only the [illegible] exaggerated claims that have been made for the treatment which give pertinence to the results obtained in two isolated cases

Our own results and those which we have quoted being so widely at variance with the claims made for the treatment it is a matter of some interest to inquire what justification the advocates of the treatment have for the faith that is in them For the question remains whether, without abolishing suppuration and its consequences, the treatment has any *sort of beneficial effect in this disease Our own and the* other cases do not preclude such a possibility To test this question would involve a more prolonged and a comparative trial in which we are under no obligation to engage unless a *primâ facie* case has been made out by those who advocate the treatment

We may be excused for pointing out that there are two *methods of testing the efficacy of a remedy. Where the* course of the disease is fairly constant (as in lupus), or even when this is not so, where a sufficiently accurate prognosis is possible, it is enough to apply the remedy in a limited number of cases But if the disease is a very variable one it is often necessary to apply the statistical method and to compare large groups of cases with similar groups separated *for purposes of control In proportion to the variability of* the disease on the one hand and to the insignificance of the effect of the remedy on the other the size of the groups must be increased to eliminate accidental errors. The method adopted by most observers who have commended this treatment has been to take a very limited number (as a rule not more than one or two dozen) of unselected cases—cases, that is to say, as they presented themselves, vaccinated and unvaccinated, mild or severe as might happen—and to draw their conclusions from the event They have dealt with ten where hundreds were necessary and as a rule they have not concerned themselves with control cases

Small-pox is a disease where such looseness is particularly unfortunate because, apart from variations owing to individual differences in natural susceptibility, we have to reckon with the *disturbing factors not of vaccination only but of* variability in the strain of disease To illustrate the latter point we may instance the fact that the fatality from small-pox in London in 1902 was over 17 per cent In 1903 it was less than 4 per cent Had we proceeded last year to test the Finsen treatment by treating with red light all our cases, or an unselected minority of them, to what a false *conclusion this disturbing factor would have led us It is* just as unsafe to neglect differences effected by vaccination in the susceptibility of communities This treatment originated in Scandinavia and has its home there We suspect that to be due less to the virtues of the treatment than to the commonsense of those communities which do not disregard the safeguards of vaccination

Of the cases published by Scandinavian observers the largest series was one of 62 by Backman[10] of Viborg For the cases of other observers we have not been able to obtain access to the original papers but the results are quoted in Finsen's "Phototherapy" The largest series were 23 by Abel of Bergen, 22 by Mygind of Naskov, 16 by Benckert of Gothenburg, and 11 by Feilberg of Copenhagen. The total number of deaths in these 134 cases was 11, a *fatality of 8 2 per cent* Dr Finsen mentions 15 other cases treated by various other Scandinavian observers without a death and their inclusion would make the fatality 7 3 per cent We are not aware how these figures compare with the fatality in small pox commonly observed in Scandinavian countries but they would not be very unusual in London The fatality is the only indication that we have to judge of the course pursued in these cases, since there is a remarkable absence of all other essential information about them We do not know how many of the patients were vaccinated or what was the type of disease from which they suffered As a rule, there is no exact information about the extent of the secondary fever Though we have no means of knowing on what basis the claims rest the authors speak of favourable results having been met with *in respect of suppuration, fever, and scarring* Most of them admit, however, the occurrence of one or another of those events in some of their cases Backman, for instance, speaks of suppuration and suppurative fever (from which some of his patients died) The peculiarity of his cases seems to have been that none of them were scarred.[11] It is difficult to avoid the suspicion that the supposed peculiarities in these several results were due chiefly to a limited experience of the disease on the part of the observers. For instance, in Finsen's "Phototherapy" the photographs and temperature charts are published of three cases treated by Feilberg and Benckert. Two were cases of severe discrete and one of modified confluent small-pox. The illustrations we presume to be given to show the favourable effect of the treatment. But not in the character of the eruption, in the extent of secondary fever exhibited, or in the amount of scarring stated to have been developed can we see that these cases were remarkable.

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[7] Bulletin et Mémoire de la Société Médicale des Hôpitaux de Paris December, 1893

[8] Semaine Médicale 1894

[9] Journal of the American Medical Association, May 2nd, 1903 Dr Schamberg in this paper which we had not seen when the above was written, makes a valuable critical analysis of the theoretical considerations and practical results on which the red light treatment is based

[10] [illegible]

[11] [illegible] scarl [illegible] more [illegible] upon those theoretical principles on which the treatment is based

When these authors speak of the absence of suppuration, fever, and scarring in their cases we shall probably be right in concluding merely that those phenomena were not prominent in the majority of their cases. But even in communities like our own, only partly protected by vaccination, most of the cases escape those incidents. The point is capable of illustration in the case of secondary fever. We have taken at random the first hundred cases completed in our hospital during the current year and we find that 30 were unvaccinated and that there were 12 deaths, indications of a type of disease severe beyond the ordinary. Yet most of the cases presented no secondary fever whatever and (excluding the 12 fatal cases) in only six did the range of temperature exceed 39° C. (102·2° F.). In a better vaccinated community and with a milder strain of disease it would be possible to give a handsome testimonial to any sort of treatment by following the lines of the Danish physicians.

A few series of cases have been published by physicians in other countries. 18 patients were treated by red light by Dr. J. T. C. Nash[12] of Southend. He compares his cases with another series of 12 (which, however, did not synchronise with the first) treated in daylight. Dr. Nash speaks in very guarded terms of his results and we do not think he would ask us to suppose that the difference in fatality between 25 per cent. and 5½ per cent. is attributable to the treatment adopted.

Casassa[13] has recorded the treatment of six patients by red light. All were vaccinated. The results are stated to have been favourable but the paper does not call for serious comment. The treatment has also been approved by Engel[14] who had some experience of it in Cairo. We have not been able to consult his paper.

We know of no other published observations favourable to the red light treatment. But on the other side we have a series of about 300 cases recorded by Brayton[15] of Indianopolis. Brayton has not published details of his cases but he took the precaution of treating at the same time an equal number of patients in wards lighted by the ordinary methods. He found that in no respects did the patients under the red light treatment do any better than the others. Suppuration, fever, scarring, and death were all unchecked.

We think that we have succeeded in showing not only that the case for this method of treatment is not proved but that no serious evidence has been advanced in favour of it. We would recommend those who are disposed to practise it to do as Brayton has done and to treat at the same time an equal number of patients in ordinary wards. We would suggest also that as it only clouds the issue and prolongs the trial to include the mass of mild cases in vaccinated persons it would be better to limit the trial to unvaccinated patients. When a sufficient body of evidence in support of the treatment has been collected on these lines it will be time enough, it seems to us, for the matter to be pressed on the attention of the profession. We are not ourselves disposed to embark on the inquiry for the reason that we derived from the study of our cases the very unpleasant impression that the effect of the treatment was harmful. We thought that it had an unfavourable effect on the general condition of the patient. The tendency to mental symptoms (delirium, headache, restlessness, &c.) seemed more marked. The suppurative fever, too, appeared to us to range higher than might have been expected. It is true that we found the patients did well in respect of affections of the eye. That was to be expected. But, on the other hand, we thought that they had more than their fair share of the other septic sequelæ of small-pox.

We cannot say how far these impressions were justified by the facts. Assuming that we were right it is, of course, possible that some of the results were attributable to the oppressive gloom and colour of the ward. But our objections lie deeper than that. For not only was it difficult to keep a close watch on the development and progress of the eruption and on the patient's condition, but it was difficult to carry out those personal and general hygienic measures on which the successful treatment of small-pox so much depends. Above all, in excluding light we must necessarily limit the supply of air. In all suppurative conditions, and especially in small-pox, not only an abundant air space and good ventilation but the freest circulation of air is essential. Any form of treatment which puts a check on the supply of fresh air must be regarded with suspicion unless it brings solid advantages in compensation. That substantial advantages do not attach to this form of treatment we feel sure. We therefore hope that this paper may have the effect of discouraging further application of the remedy in this country. But we venture to appeal also to Dr. Finsen, who has done so much for suffering humanity, to cease to lend the weight of his authority to support a method of treatment which, if it is inefficacious, must necessarily be inhumane.

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[12] THE LANCET, March 5th, 1904, p. 646.

[13] Il Morgagni, 1902.

[14] Therapie der Gegenwart, March, 1901.

[15] Journal of the American Medical Association, July 25th, 1903.

SLEEPING SICKNESS: A RÉSUMÉ.[1]

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SLEEPING SICKNESS has been known in West Africa since 1803. Our knowledge of the origin of the Uganda epidemic is very vague. Though many natives date its beginning from 1896 it did not become known to Europeans until 1900. The fact that the natives of Uganda were not acquainted with it is no proof that former epidemics have not occurred, for they have no written records, their memories are short and inexact, and their ideas of the lapse and computation of time are rudimentary. It is quite possible that the disease is endemic in certain spots and becomes epidemic only under conditions favourable to it which may sometimes recur after long intervals. It is also quite possible that when more epidemic areas have been worked out and the organic cause has been more firmly established endemic patches may be found to exist from the great lakes to the West Coast of Africa. One of the greatest difficulties in the study of sleeping sickness has always been the extraordinary duration of the incubation period. It was long ago surmised, from cases which occurred among slaves who had been to the West Indies from Africa, that as long as seven years might pass before the disease manifested itself, while, from cases observed in Uganda, it seems certain that one or two years may elapse. Such a long and uncertain period, combined with the slow course of the disease itself, which may probably occupy any time from two months to two years, renders the scientific study of cases most difficult and in the vast majority of cases impossible. To this must be added the extreme difficulty of identification of most African natives when under intermittent observation only.

Sleeping sickness attacks all ages and both sexes but infants usually escape, and old people, who are not themselves numerous among African natives, are perhaps less liable. As was formerly pointed out by myself[2] children under three years of age rarely show the disease, the reason possibly being that they are kept more in the houses and villages and so are less exposed to infection. But the long period of incubation or latency must also be borne in mind, for it is conceivable that infection during infancy might frequently not result in sleeping sickness until early childhood. The malady does not seem, however, to attack all classes equally. The higher chiefs seem less liable to it and Europeans have remained almost immune, probably in both cases for similar reasons. As might be expected from its long incubation and slow course the onset of the disease is most insidious. It is practically impossible to say, with regard to any given case, on what exact date the symptoms commenced, while even approximate dates are difficult to verify. No doubt some sudden nerve crisis, such as a fit or an attack of mania, may sometimes draw the attention of the patient or his friends to his condition and often a period of days, weeks, or months will be given on inquiry for the duration of the symptoms, but it always remains very doubtful for how long previously the patient may have been ailing.

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[1] Abstract of a paper read before the Islington Medical Society.

[2] Journal of Tropical Medicine, Oct. 1st, 1902.

Clinically the course of sleeping sickness has been, for convenience, divided into three stages, but their limits are very ill-defined. They are (1) the early stage, (2) the pronounced stage, and (3) the lethargic or somnolent stage. There is also sometimes an intermediate stage of nerve crisis, excitement or exhilaration, which occurs usually at the beginning of the second stage and is really a part of it. Probably the earliest subjective symptom is a chronic persistent or intermittent headache with lassitude and this may be accompanied with, or replaced by, vague pains in the back, chest, or "all over." With regard to objective signs pyrexia, if constantly looked for, may practically always be detected. From the first there is a general enlargement of the lymphatic glands, in which glands from the size of a filbert to that of a hazel-nut are found in most or all of the superficial groups, those of the neck being the most constantly affected. One of the earliest signs usually noted is an arhythmical, jerky, or twitching tremor of the tongue. There may also be an alteration of mental attitude or habits which, however, is often noticeable only by relatives or associates of the patient. As none of the above symptoms, unless it be the tongue twitching when well marked, is in any way pathognomonic it is to a combination of them that one must look for a diagnosis in the early stage. A conjunction of chronic headache or pain with lassitude, tongue tremor, and glandular enlargement is always very suspicious in a person who has visited an epidemic area, and if there is also evidence of change in disposition or if there is recurrent pyrexia the diagnosis becomes almost certain. Another early, though less early, symptom is a more or less general pruritus, of which there may be evidence in the *form of scratch-marks or small sores but which is not* [illegible] soon there [illegible] ed at first [illegible] behaviour are generally normal, at least while under medical exa- [illegible] ation, and diagnosis may [illegible] one sees the more difficult [illegible] agnosis in patients exhibiting symptoms of the early stage.

In the second or pronounced stage the diagnosis becomes almost always easy and certain. As a rule, it may be dated from the characteristic alteration which begins to take place in the patient's facial expression and general appearance, often accompanied by a change in his manner, habits, or disposition. This stage, however, is not infrequently ushered in by nervous crises such as epileptiform fits, attacks of mania, melancholia, or dementia, or by a state of exhilaration during which the patient has very much the appearance of being under the influence of alcohol. The duration of these nerve crises is generally short relatively to the duration of the disease, but they may recur or be continued into the later stages. During their continuance the patient often suffers from, and may complain of, sleeplessness. Very early in the second stage, if not frequently before, sexual impotence occurs in males though there is occasionally an outburst of excitement during the phase of exhilaration or mania. In women the menses cease early, often indeed before they have noticed any signs of illness, so that one is tempted in such cases to antedate the alleged time of onset of the disease by the period of duration of amenorrhœa. With the development of the second stage tongue twitching becomes more marked and tremor begins to spread to the cheeks and lips and to the body generally. In some cases, especially children, choreic twitchings, occasionally general but more often confined to the face and the arms, will be observed, and they might perhaps more properly be included among the nerve crises above enumerated. The muscles become flabby, the face begins to lose its expression and the limbs their strength; the speech often becomes mumbling and the articulation blurred. Fibrillary tremor becomes visible in the tongue, [illegible] The eyes get a vacant, stolid, [illegible] ie vague pains about the head, [illegible] ad are sometimes severe. Soon there is disinclination to move or to speak and inability to fix *the attention for any length of time.* There may now be signs of muscular wasting but this occurs late as a rule and even then not invariably, a good deal depending on the patient's ability to obtain food. At length there is a tendency to sleep at all hours and the patients pass surely but gradually into the last or lethargic stage which has been so graphically described and in which they eventually die, sometimes suddenly but nearly always very slowly, so that the vital functions seem to dwindle away gradually.

As occasional symptoms in the last stage may be mentioned a movement of thumb and finger or fingers, generally of one hand only, resembling paralysis agitans but not truly rhythmical, also athetosis, convulsions, ptosis, and conjugate deviation of the eyes with a movement resembling nystagmus. A troublesome stomatitis or marginal ulceration of the gums is common at almost any stage and if cured may recur again and again, but it is not to be regarded as a part of the disease.

In the first and also in the second stage there may occur, as was formerly pointed out by myself,[3] intermissions or remissions of the symptoms which may be of considerable duration—occasionally even months—but which tend to grow shorter as the disease progresses. During these intervals symptoms almost or entirely disappear so that the patient may seem, to casual observation at any rate, quite well. Even in a well-advanced stage patients may be sufficiently roused for their appearance and behaviour to present little abnormal to an ordinary examination.

On surveying the symptoms broadly two facts stand out fairly clearly: first, that they are to a great extent intermittent in character and not steadily progressive; and, secondly, that on the whole the nervous symptoms are secondary to the general, a fact which points to a general infection rather than a local disease.

The chief pathological evidence of general infection is the constant enlargement of lymphatic glands in all, or nearly all, the groups, both superficial and deep, while a chronic [illegible] ability the [illegible] this lesion [illegible] Mott and confirmed by other observers. At present, however, they have not been described as occurring in inoculated animals and the question may still be considered open as to how far they are to be connected with the various organisms which are being studied in causal relation to the disease and even how far they can be considered as the actual and necessary cause of death, or of the whole of the nervous phenomena associated with sleeping sickness.

The two organisms which are at present being studied in connexion with [illegible] described by th [illegible] of West Africa [illegible] panosome discovered by Castellani, of which the importance and universal presence in sleeping sickness in Uganda were worked out by Bruce. The trypanosome occurs not only in the blood but in the cerebro-spinal fluid in sleeping sickness, which thus differs from the condition at present known as trypanosomiasis, in which *the organism is found* in the blood only.[4] There seems to be no doubt from Bruce's investigations that at any rate the chief carrier of the trypanosome is glossina palpalis, a tsetse fly the distribution of which in the Uganda Protectorate corresponds roughly with the epidemic area. Whether this correspondence exists in other epidemic areas is not yet worked out.

Inoculation experiments by Bruce, in which the inoculations were made respectively with the blood or cerebrospinal fluid of sleeping sickness, the blood of trypanosomiasis, by the bites of fed flies and of wild flies, have produced trypanosomiasis in monkeys (cercopithecus), some of which have died, always after a period of months, in a condition clinically resembling sleeping sickness, and the macroscopic appearances at the necropsies have appeared to be identical with those seen in sleeping sickness.

How the diplo-streptococcus finds entrance to the human body is not at present known but it is pretty constantly found. The Portuguese Commission found it in 52 per cent. of the cerebro-spinal fluids which they examined and in many of the negative cases it was present in other organs. It has been found in various tissues, rarely in the blood, but, as far as I can learn, in no case yet more than six months before the fatal ending. It is found in large numbers in the microscopic brain lesions. It has not produced in animals by inoculation symptoms resembling sleeping sickness but causes death by acute septicæmia in from two to four days in rabbits and other small animals and in from one to three weeks in the cercopithecus. Its presence has not so far been recorded in those animals which have died with symptoms of sleeping sickness after inoculation with trypanosomes. It is considered, however, by some of the most competent observers engaged in the matter to be in some way intimately associated with the disease, with the microscopic brain changes, and with the fatal ending.

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[3] Loc. [illegible]

[4] Since this paper was written [illegible] as occurring more plentifully i [illegible] both in trypanosomiasis and in [illegible] observation is thought to be developing some of trypanosomiasis under observation is thought to be developing some signs of sleeping sickness. Greig and Gray: THE LANCET, June 4th, 1904, p. 1570.

Taking the disease as a whole, and especially from a clinical point of view, the hypothesis of trypanosome causation would seem to cover more of the facts. The areas of distribution, so far as at present known, the distribution and habits of glossina palpalis, the comparative immunity of Europeans and apparently of the better class natives in infected areas, the fact that the disease appears to be incommunicable outside these areas, the long incubation, the course and the apparently invariable fatality of the disease, the greater resemblance to sleeping sickness of the malady produced in inoculated monkeys as compared with the acute septicæmia produced by the coccus—all these facts seem to favour the hypothesis of initial trypanosome infection; whereas some, at least, such as the long incubation and duration, the invariable fatality, the comparative immunity of Europeans and the impossibility hitherto of producing a disease analogous with sleeping sickness in animals, appear to tell rather against a streptococcal etiology, though they do not, of course, exclude the possibility of an association or secondary infection with the streptococcus being of the greatest importance to the course of the disease. The analogy of sleeping sickness with nagana is surely nearer than that with any streptococcal infection known. I have been unable to learn, however, that nagana ever occurs in epidemic form among indigenous animals as sleeping sickness does among indigenous natives.

In Sir Patrick Manson's classic case of trypanosomiasis in a European lady who died only a few months ago in which the history was well established and in which trypanosomes had been present from the first, sleeping sickness at length after two years developed in an unmistakable form. The streptococcus was found in the cerebro-spinal fluid and the tissues after death but it was probably present for some time previously and may even have been acquired before the patient left Africa. It seems from this case, however, quite reasonable, in the present state of our knowledge, to assume the hypothesis that the trypanosome is the initial cause of the disease and to suppose that there may be a more or less prolonged febrile or latent stage of trypanosomiasis which may end in sleeping sickness if the organism finds its way into the cerebro-spinal system.

In the case of native Africans we have been able neither to fix the date of inoculation nor to trace a history of initial pyrexia in cases of sleeping sickness, though a certain number of cases of trypanosomiasis remain under careful observation. As has been mentioned above, pyrexial attacks, often very slight, may probably always be recognised very early in the disease if there is the opportunity of looking for them. In Europeans one could, as a rule, obtain a history of precurrent febrile attacks by careful inquiry but in the case of natives it has proved so extremely difficult to obtain any trustworthy information that it remains quite possible that they do occur. In none of the natives with trypanosomiasis whom I have seen has the pyrexia or illness been severe, nor, beyond the fact that they have felt ill for a day or so, would they be able to tell much about it even shortly afterwards.[5] They do not recognise pyrexia as such. They may feel heat, cold, pain, or weakness but will often deny having fever even with a high temperature. To a slight or moderate febrile attack, to anything but a severe or prolonged illness, they would attach little importance, while, if it had occurred several months, or even weeks, before sleeping sickness they would not connect the two even if they remembered it.

As to whether trypanosomiasis must necessarily and inevitably pass into sleeping sickness, there is some slight reason to believe and to hope not. In the conditions in which many groups of natives live it would seem quite impossible for any of them to escape repeated inoculation and yet a few, in many cases at any rate, have so far escaped death. From this it may be hoped that the trypanosome may in certain circumstances die out in the blood; that those conditions which are favourable to its reaching and inhabiting the cerebro-spinal system and which may perhaps include association with, or secondary infection by, the streptococcus may never occur. The outlook at present is far from promising. There is no curative treatment known which is of any value. The prospects of exterminating the trypanosome or the fly are so far hopeless and it may prove that we have also the streptococcus to deal with. We may be able, however, to control the numbers and action of the fly to some extent. We already know much of its habits and the localities which it affects. Roughly speaking, it may be said to haunt jungle only—shady places with thick undergrowth, preferably near water—and not to move far from its haunts. It does not seem to penetrate into large open villages or clearings. It is not usually seen in decently hoed native gardens or plantations, nor does it occur in European settlements. It can, then, to a certain extent, be avoided.

The reasons why there is such a marked relative immunity for Europeans are probably: 1. Their manner of clothing leaves exposed a less area of skin than that of the natives and only the more sensitive parts, the hands and the face. 2. They do not live, or lie asleep in the day-time, nor do they usually work, in jungle or forest. They are less liable to get bitten and, when they do, they are more likely to brush off the fly before inoculation has been completed, for the insertion of the proboscis of the fly is easily felt, like the prick of a needle.

A systematic clearing, then, of the usual places of living and working, of the villages, watering places, landing places, &c., of the natives and the removal of the sick into open spaces would do much to diminish the risk run by the majority, especially the women and children. The more they aggregate into large villages and clearings and the less they live like animals in uncleared jungle the less likely they will be to be bitten by the tsetse fly and though, of course, some occupations, such as fishing or wood-cutting, will always be dangerous, the smaller number exposed to infection the less probability will there be of the occurrence of widespread epidemics. In the immunity of Europeans lies the best hope for the native.

Uganda.

THE SYMPTOMS AND TREATMENT OF THE INTRACRANIAL COMPLICATIONS OF OTITIS MEDIA; WITH CASES.[1]

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CHRONIC suppurative inflammation of the middle ear is a disease of such great frequency and is liable to such a variety of complications, some of them of minor import but some of them fraught with extreme risk to life, that its study is of interest to all medical practitioners. The study of the disease itself, its minor complications and treatment, would alone occupy more than the limited time at my disposal to-night even were I in a position to throw any fresh light on the subject, and I shall not essay the task in the presence of professional colleagues who are better qualified than I to do so. But when the disease spreads beyond the temporal bone and invades the cavity of the cranium complications may arise which call for immediate and sometimes heroic surgical measures, and it is of these that I wish to say a few words. Upon a prompt recognition of their symptoms the patient's life may often hang and the busy practitioner who forms an early diagnosis has as great a part in saving the patient's life as the operator who successfully deals with the case with the knife. The tardy recognition of a meningitis which has become general or of a septic thrombosis when the lungs are riddled with abscesses is practically of no value except for prognosis, for operation is then an almost hopeless proceeding and, in fact, only tends to bring discredit upon surgery.

The three intracranial complications which are of greatest frequency and importance are: (1) Intracranial abscess either between dura mater and bone or in the cerebrum proper and cerebellum; (2) thrombosis of the sigmoid portion of the lateral sinus; and (3) septic meningitis But it must be remembered that any two of these complications or even all three may be present in a single case. The shell of bone which separates the tympanum and its accessory cavities from that of the cranium is in places so thin that it is a matter of some wonder that brain complications are not more frequent than they are in middle-ear disease But that the risk of life is a real and serious one is shown by the fact that few, if any, of the better-class insurance companies will accept the life of a proposer with any active middle-ear disease without an almost prohibitive addition to his premium Such complications are more frequent in childhood than in adult life, partly because the petrous bone in childhood is thinner than in after years and partly because acute otitis media most commonly commences in childhood and the risk of extension is, of course, greatest while the disease is most active

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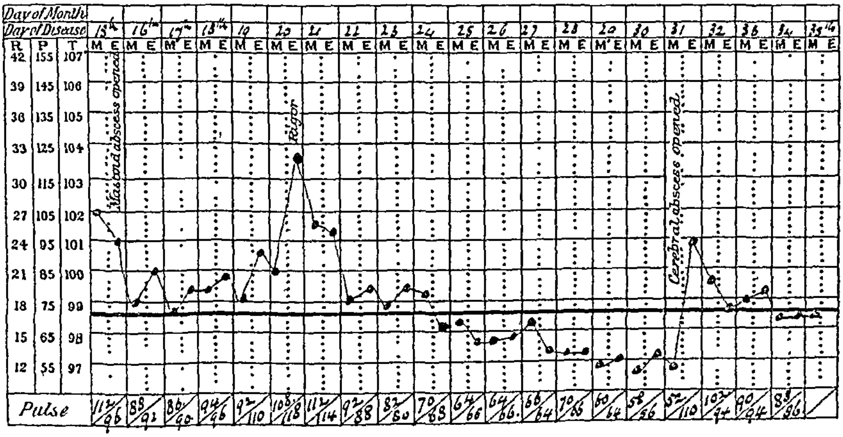
[5] Loc. cit.

[1] A paper read before a meeting of the Post-Graduate College on June 20th, 1904.

In order as much as possible to avoid repetition and to limit my remarks to the hour at my disposal I will discuss [illegible] nplications, [illegible] ce [illegible] be remembered that there may be no visible ear discharge in these cases Even when the otorrhœa has previously been profuse it frequently ceases or becomes much diminished on the onset of cerebral complications Amongst the poorer and less observant class of patients, no discharge may ever have been noticed, and this occasionally throws the practitioner off his guard Where present, the discharge is usually extremely fœtid and the same fœtor is often present in the patient's breath, his excreta, and in the pus which is evacuated from the brain or lateral sinus In a doubtful case an examination of the ear should always be made. After cleaning the external meatus of inspissated pus or cerumen, a perforation will then almost always be discerned in the membrana tympani or the membrane may be found entirely destoyed. Cases, however, of cerebral abscess have been recorded following middle-ear disease where the membrane was still intact.

Pain.—Pain is usually the first symptom complained of in all these cases It is "boring" or "shooting" in character, and is usually one-sided. It is often agonising and apt to come on in paroxysms. The intensity of the pain and its usually one-sided character help us to distinguish sinus thrombosis or cerebral abscess with typhoid abdominal symptoms from enteric fever in which the headache is a more general one and is not so prominent a symptom The pain usually remains a prominent symptom throughout the case or as long as the patient retains his consciousness As coma supervenes in the later stages of cerebral abscess or meningitis the sensibility becomes impaired, but in sinus thrombosis it often remains until the end.



Tenderness.—With the pain there is usually great tenderness over the mastoid and temporal regions, in fact, the whole side of the head is often acutely tender to the touch. Such tenderness may of course be due to suppuration limited to the mastoid cells and antrum or to a sudden lighting up of mischief in the middle ear But in these cases the tenderness is more limited in its area and is soon followed by œdema of the tissues over the mastoid process, the ear itself being pushed forwards and downwards When the lateral sinus is involved if the skin behind the ear be carefully and systematically palpated an exquisitely tender point may sometimes be elicited which corresponds with the exit of the mastoid emissary vein from the skull This is a very significant symptom when present and attention has been called to it by my colleague Mr. L. P. Gamgee In the later stages of sinus thrombosis when the infective process has extended to the extracranial portion of the jugular vein swelling and tenderness appear in the upper portion of the posterior triangle of the neck and spread downwards along the course of the vein In doubtful cases, where it is difficult to say on which side the brain trouble is, percussion of the two sides of the head is sometimes of value, the patient wincing when the affected side is tapped

Rigors and vomiting.—These frequently herald the extension of the disease from the bone to the brain. Such rigors do occasionally occur when only the mastoid antrum is involved But the occurrence of a rigor in a case of ear disease is always of grave significance and should in any case be followed by an operation on the antrum if such has not already been made In some cases the rigor is slight, particularly in cerebral abscess, and it may pass unobserved. It is frequently called a convulsion by the patient's friends. They are most frequent in sinus thrombosis and are usually a marked symptom throughout the disease, occurring at intervals of two or three days and each one followed by profuse perspirations—in fact, being the typical rigors of pyæmia In septic meningitis they occur at irregular intervals Vomiting without any gastric disturbance is also an early symptom and continues at irregular intervals throughout the course of cerebral abscess and meningitis. It occurs also in sinus thrombosis but is not so prominent a symptom. Complete anorexia and rapid wasting with vomiting are very suggestive of abscess formation in the brain and are particularly prominent symptoms when the pus is forming in the cerebellum

The temperature, *pulse*, and *respiration* are liable to extreme variations and vary much in the course of the particular complication. In cerebral abscess forming slowly and without meningitis, the temperature after the first initial rise has a tendency to fall and gradually become subnormal At the same time as the abscess enlarges and the intracranial pressure increases the pulse and respiration also fall in frequency The pulse is slow, often soft rather than full, and may fall as low as 35 or 40 The respiration falls with the pulse and in cases unrelieved by operation actually stops some time before it. These changes in pulse and respiration are most marked in abscess of the cerebellum, The respiration in these cases may be Cheyne-Stokes in character and the pulse extremely slow. When, however, the abscess is of quick formation, and accompanied by meningitis and encephalitis of the surrounding brain tissue, both temperature and pulse may continue high, but even then as the case progresses both show a tendency to fall. (See chart.)

The temperature chart in sinus thrombosis is usually quite typical. It is a high one with marked remissions between the rigors. During these the temperature may rise as high as 105° or 106°. It seldom, however, falls to normal between them and when septic emboli have formed in the lungs the remissions become less marked. The pulse varies with the temperature. During the rigors it may be almost uncountable and then fall to between 80 and 90 afterwards. The respirations at first vary with the temperature but when the lungs become involved gradually merge into the shallow, painful. catchy breathing of pneumonia. The occurrence of stitch-pains in the side and difficult painful respiration in the course of a case is always a dire omen and is soon followed by the expectoration of the characteristic "prune juice" fœtid sputum, with local patches of dulness over the bases of the lungs and other evidences of breaking-down pulmonary infarcts.

In meningitis the temperature is irregularly high (from 102° to 104°) but does not show the marked remissions of sinus thrombosis. The pulse remains consistently rapid and as the fatal issue approaches frequently cannot be counted. The breathing is usually rapid but where the base is much involved may be Cheyne-Stokes in character. The bowels are usually constipated in meningitis and cerebral abscess, while diarrhœa with very fœtid stools is often present in sinus thrombosis.

Appearance and odour of the patient.—During the progress of a case of cerebral abscess the patient rapidly emaciates and his complexion usually becomes of a peculiarly sallow earthy tinge. A yellowish tinge is sometimes present in sinus thrombosis but neither is characteristic. There is often a peculiarly offensive odour about these patients, their mouths, breath, and excreta generally having exactly the same smell as the pus which is afterwards liberated from the cerebral abscess or infected sinus. In cases of sinus thrombosis where abscesses have formed in the lung the smell is generally abominable and putrescent and may necessitate the isolation of the patient.

The intellect and senses.—In a typical case of cerebral abscess, as the pus forms and pressure increases, the cerebral processes become slower and duller. The patient at the commencement shows a decreasing interest in things around him and an increasing forgetfulness. These symptoms are soon followed by a drowsiness from which it becomes more and more difficult to rouse him. In this state he remains oblivious of any wants, though he can generally be roused for a few moments to take food or when loudly spoken to. There are at the same time rapid failure in the muscular power and wasting of the muscles. As the abscess increases in size this drowsiness deepens into actual coma from which he cannot be roused by any stimulus. In this stage there is usually involuntary passage of urine, or sometimes complete urinary incontinence, and the urine frequently contains albumin which may disappear after evacuation of the abscess. In sinus thrombosis the contrast is a complete one. In the absence of a complicating meningitis the intellect is often unclouded and the senses are undimmed to the very last. I have in one or two cases noticed a peculiar hypersensitive state of the patient with a tendency to chatter about himself which is quite characteristic of this disease. When meningitis supervenes on abscess or sinus thrombosis these symptoms are masked by those of meningitis and partial or complete coma quickly sets in.

Eye changes.—When abscess of large size exists in the temporo-sphenoidal lobe it may produce complete paralysis of the third nerve on the same side by direct pressure causing ptosis, immobility of the eye, with an external squint and dilated and fixed pupil; when the abscess is small the pupil is usually small and sluggish in its action to light. There is usually optic neuritis in both cerebral abscess and meningitis and in the former it is sometimes most marked on the side of the abscess. In meningitis the pupil changes are usually bilateral and the neuritis is intense. In uncomplicated sinus thrombosis there are no changes in the pupil and, as a rule, no optic neuritis.

Muscular paralysis.—Temporo-sphenoidal abscess when of large size may cause hemiplegia or paresis of the muscles on the opposite side of the body, the facial muscles being most affected. This must be carefully distinguished from the facial paralysis sometimes present from direct implication of the nerve in the disease, as it lies on the aqueductus Fallopii. The paralysis in this case is a complete one and on the same side as the abscess. Sensory aphasia has occurred in several nervous cases of temporo-sphenoidal abscess from direct pressure on Broca's convolution. It is generally difficult, owing to the mental condition of the patient, to detect slight paralyses, but in such cases the dynamometer may give valuable help. In sinus thrombosis there are no characteristic paralyses.

Chest signs and symptoms.—These are of little clinical importance in abscess and meningitis but of the gravest importance in thrombosis. The emboli carried into the blood-stream usually lodge in the minute pulmonary blood-vessels and set up multiple small pyæmic abscesses. The embolism, as a rule, takes place about the second or third week. The earliest signs are often a "stitch" pain in the side and a short hacking cough. These are soon followed by the appearance of scattered patches of dulness over the bases of the lungs. The consolidated patches quickly break down and the patient coughs up the characteristic fœtid "prune-juice" sputum. Unfortunately, when the lungs have become involved surgery has little chance of success and operation on the sinus is generally too late. In other cases the systemic infection seems to cause a train of abdominal symptoms. Frequent vomiting, with abdominal distension and pain, sets in and continues. The stools are loose and often there is profuse diarrhœa, the stools having the characteristic fœtid odour of the breath and ear discharge. Together with these symptoms there may be enlargement of the spleen. These cases are frequently mistaken for typhoid fever which they closely resemble. There are, however, no characteristic rose-spots but perhaps a dull-red, general, mottled rash and the blood does not give the Widal reaction. There are in addition the head and ear symptoms and the headache is much more severe and often unilateral. There are certain other local signs of thrombosis which in doubtful cases may assist in the diagnosis and which may be alluded to here. In a considerable proportion of the cases the soft tissues over the mastoid, besides being tender, are also œdematous. As the thrombosis extends down the internal jugular vein there will be pain and tenderness below and in front of the mastoid process and the thrombosed vein may actually be felt as a hard tender cord. The deep lymphatic glands and soft tissues around the vein soon become inflamed and swollen. Pus will eventually form around the vein and point in the neck below the mastoid process. The pain and tenderness in the tissues of the neck cause stiffness but usually the actual retraction of the head, so characteristic of meningitis of the base, is absent. The mastoid emissary vein may be distended or thrombosed. The acute tenderness over it I have already alluded to.

The prognosis in all the intracranial complications of middle-ear disease is a grave one. General septic meningitis is the gravest of the three. Personally I doubt whether in any case where the meningitis has become a general one has the patient ever recovered; nor do I think that surgery at present holds out any chance to the patient. When the pus formation is localised and the abscess forms between the dura mater and the bone the prognosis is much more hopeful; such abscesses may even discharge themselves through erosion in the bone into the tympanum. I have published such a case and many others are on record. Cerebral abscess usually proves fatal in a few weeks. Rare cases have been recorded where the abscess has become encysted and ultimately absorbed. But this, however, rarely if ever happens where the abscess owes its origin to ear disease. On the other hand, there is no cerebral affection in which surgery has shown such brilliant results. Probably quite two-thirds of the cases of abscess above the tentorium undergo complete recovery after free evacuation and drainage. The prognosis of cerebellar abscess after operation is more grave than that of abscess in the temporo-sphenoidal lobe. The pressure symptoms on the delicate structures at the base of the brain are more rapid and severe and the risk of meningitis after operation is greater.

Infective thrombosis of the lateral sinus if unrelieved is almost invariably fatal. Post-mortem examinations, however, do occasionally reveal a lateral sinus which has been obliterated many years before death, where from the presence of old-standing ear trouble the process has in all probability been an infective one. But the micro-organisms cannot in such cases have invaded the thrombus. In THE LANCET in 1861 P. Hewitt reports a case where after apparent involvement of the lungs recovery eventually took place. If systemic infection has not already occurred operation holds out a reasonable prospect of recovery. But when the lungs are already involved surgery is almost powerless. *Nevertheless, an attempt should be made* to shut off and to remove the source of the infective emboli.

Treatment.—Various operations have been devised by surgeons for the relief of intracranial abscess and sinus thrombosis, the object in the one being the detection, tapping, and efficient drainage of the abscess, and in the other the opening and complete cleansing and drainage of the infected sinus. Into the details of these various operations I do not propose to enter, but I wish briefly to touch upon the operation which I carry out in these cases and which has never failed in my hands to discover the pus when present.

The entire scalp should be shaved the day before the operation when this is [illegible] it is [illegible] wards [illegible] y and [illegible] litory [illegible], all [illegible] the [illegible] These processes should all be repeated on the operating table. If the patient is still conscious chloroform is the best anæsthetic as it causes less cerebral congestion. But a most careful watch must be kept upon both the pulse and respiration throughout the whole operation, the respiration in particular being liable to fail and to stop when the intracranial pressure is great, especially when abscess is present in the cerebellum. When the patient has already lapsed into a state of coma no anæsthetic will be needed or at most a few [illegible] chloroform to dull the pain of the skin incision. [illegible] incisions are recommended and different author[illegible] widely differing landmarks for the exposure of th[illegible] antrum, the lateral sinus, and the brain (above and below the tentorium). I shall only mention the one which I usually employ and with which I have every reason to be satisfied.

The first stage in the operation is to open the mastoid antrum and to lay its cavity freely open into that of the middle ear. We may thus in some cases be able to trace the course of the disease backwards through the bone and to form some idea of the situation and extent of the intracranial mischief when present. To do this an incision with a slight concavity forwards is made directly down to the bone, through all the tissues of the scalp, and extending from a point on a line with the top of the pinna almost as low as the tip of the mastoid process. The soft tissues are elevated from the bone and the pinna drawn well forwards; the margins of the osseous meatus and boundaries of the suprameatal triangle under which the antrum lies are defined. By means of bone chisels and gouges the antrum is opened just above and behind the [illegible] often very much enlarged in size and [illegible] bony wall is to be removed and [illegible] cleansed. The cavity of the antrum is then laid freely open into that of the middle ear and bony meatus by chiselling through the bridge of bone which lies between the surface of the skull and the aditus of the antrum. While freely opening the middle ear and antrum it is sometimes possible to detect an erosion in the roof of [illegible] tympanum or antrum leading into the cavity of [illegible] cranium. In such a case the opening is enlarged and brain abscesses have been tapped through such erosions. A large curved flap of scalp is now to be turned down from the skull behind the first incision. This is done by making a bold curved incision, starting at the upper angle of the first incision and carrying it upwards and backwards and then downwards through [illegible] of the scalp. The flap of scalp so raised [illegible] wards with the periosteum covering the [illegible] the bone and the skull is freely exposed. [illegible] examined, the condition of the mastoid emissary vein, whether patent or thrombosed, is noted and the various bony sutures and landmarks are clearly defined. The angle of junction of the posterior inferior angle of the parietal bone with the squamous and mastoid portions of the temporal bone is particularly noted. The junction of the sutures is quite easily defined on the bared skull and is an important landmark. A line drawn from it to the [illegible] towards the jugular fossa; a trephine should never be applied in this line as the bone at the bottom of the groove is occasionally very thin.

The dura mater and brain above and in front of the sinus *are first of all to be explored. To do this a crown of bone* one inch in diameter is removed with a trephine. The centre pin of the trephine is placed—in the adult—over a point one and a quarter inches above and one and a quarter inches behind the centre of the external auditory meatus. The trephine is applied in the usual manner, and personally I prefer a trephine worked by hand in preference to any of the machine-driven or electrically driven instruments. The opening thus made in the skull is rapidly enlarged in a direction downwards and forwards with Hoffmann's bone forceps (taking care before each application of the forceps to separate the dura mater from the under surface of the skull) until the opening is continuous with that already made for cleansing the antrum. In this way there is practically no risk of inadvertently wounding the wall of the sinus, however thin the skull may be. If the collection of pus be an epidural [illegible] mater and the bone—th[illegible]. The pus is evacuated [illegible] cleansed and irrigated with some mild antiseptic. Particular care should be taken in these cases to see that suppuration has [illegible] ded along [illegible] it is very [illegible] the skull should be removed. When pus is not encountered outside the dura mater the condition of that membrane is to be noted carefully. Increased tension and absence of visible pulsation usually point to a diffuse lepto-meningitis beneath or to a localised cerebral abscess. The surface of the dura mater [illegible] with unhealthy granulation [illegible] over the sinus. By careful [illegible] to detect that the sinus is [illegible] owing to its feeling of solidity.

The next step in the operation is to explore the brain above the tentorium for pus. This may be done quite easily and thoroughly without at first opening the dura mater. The needle of an exploring syringe is passed through the dura mater into the brain substance at a point one inch above and one inch behind the osseous external meatus. It is thrust in a direction downwards, inwards, and slightly forwards, and should be directed towards the roof of the tympanum and the upper border of the petrous bone. The needle itself should be of a good size, as if small it is apt to become choked by small portions of soft brain matter. The brain may in this way be very freely explored in many places and in various directions without apparently any permanent injury being inflicted. I have on two or three occasions drawn off fluid from the lateral ventricle in my explorations. Directly pus is reached the needle should be detached from the syringe and held firmly *in situ* as a guide while the abscess cavity is reached [illegible] The dura mater is opened by a crucial incision [illegible] of sinus forceps or large trocar and cannula is passed into the abscess cavity through which the pus is allowed to escape. The pus is usually extremely offensive and has the same peculiar fœtid odour which [illegible] the ear discharge. A [illegible] passed into the ca[illegible] abscess is irrigated [illegible] and cleansed, but it must be very cautiously shortened and must not be removed until the patient's condition has become quite satisfactory and all discharge has ceased. The dura mater should be sutured loosely round the tube to prevent adherence of the brain cortex to the scalp when the flap is laid down. When the abscess has been a large one and [illegible] ranial pressure great the immediate relief of the [illegible] is often marvellous. The pulse almost at once [illegible] frequency, the respirations are deepened and quickened, and pulsation returns in the exposed brain cortex.

If the patient's symptoms point strongly to abscess of the brain and no pus is discovered after repeated exploration above the tentorium the lateral lobe of the cerebellum should be explored. An abnormally slow pulse, marked optic neuritis, rapidly failing respiration or Cheyne-Stokes's breathing, with perhaps some retraction of the head and a

A CASE OF MULTIPLE SARCOMA.

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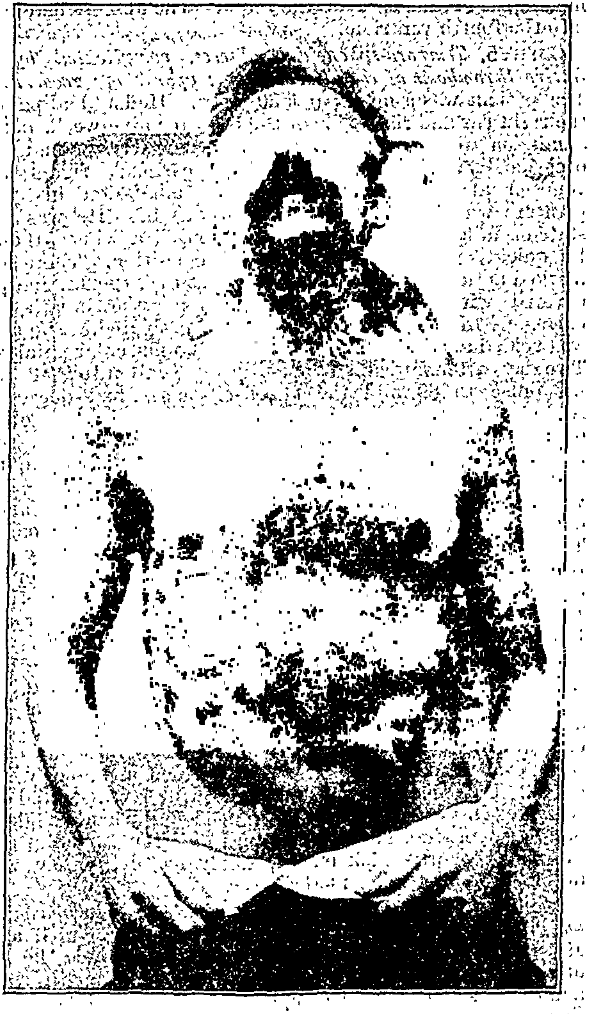
A MAN, aged 32 years, was sent to consult me on Jan. 7th, 1904, by Mr. F. E. Streeten of Swindon. The patient was in his usual good health until the previous July, when he noticed a "lump" in the abdominal wall which appeared "to have sprung up suddenly in the night." It was unattended by pain. A few days afterwards he complained of cough which had continued up to the time when I saw him but which had not been attended by hæmoptysis, or expectoration, or night sweats, although he had lost flesh considerably. Since then numerous similar "lumps" had appeared all over the trunk, back and front. There was no history of syphilis. His parents were both living and healthy and there was no family history of tuberculosis. There was no history of any previous extensive disease of the skin but a slight patch of eczema had existed over the inner left ankle for some months.

The patient was admitted into the West London Hospital and on examination he was found to be a well-made man, somewhat pallid and emaciated. When he had removed his shirt some tumours were noticed in the skin over the scapular regions. In appearance they gave one the suggestion that they were sebaceous cysts. But further examination failed to discover their porous outlets and, moreover, their consistence on digital examination pointed to their being subcutaneous new growths. On examining the front surface of the body an extraordinary condition of affairs was presented. Scattered over the abdomen and thoracic walls were a number of solid tumours, varying in size from that of a Tangerine orange (which was the first tumour the patient had noticed) to that of a large pea. The large growth was situated in the right side of the abdominal wall midway between the anterior superior iliac spine and the umbilicus, though slightly above this horizontal line. Its surface was red and granular in appearance, looking as though it was ulcerated; but there was no discharge or "weeping" of any kind, although yellowish scales of necrosed epidermis appeared between the granular nodules. On the opposite side of the abdominal wall in the corresponding site there was almost a similar lesion, the difference being that two contiguous tumours occupied the space filled by the tumour in the right side, while symmetrical growths were seen to exist between the larger ones described above and the nipples. Both mammæ were indurated and involved with the neoplasm, the skin, however, in these localities being as yet intact. Similar nodules, though not well seen in the illustration, were found in the skin over each fourth costal cartilage, and when one traced these various growths they gave one the impression of a circular outbreak which involved the abdominal wall principally, but also the lower zone of the thorax to a lesser degree. This configuration, however, could only be accidental, as other tumours were found within this zone, and I know of no condition of vessels, whether appertaining to the circulatory or to the lymphatic system, which could give origin to this annular arrangement of the tumours. Other similar growths, though not so large, only two or three being of the size of nutmegs, were found over the front of the upper chest. The lymph glands of the groin were indurated and matted together but the skin moved easily over each mass. The glands of the axillæ were similarly affected though to a less degree. Those of the neck were unaffected.

The skin was fully moveable over each tumour and was not involved over the smaller ones, but over those which had attained a large size corresponding to the bulk of a pigeon's egg the skin was reddened and glazed, whilst the superficial veins stretching over them were engorged and slightly varicose. In those which were more advanced, as in the largest tumour first described, the surface was red and granular, with necrosed epidermis scales in the fissure between the tubercular outgrowths, but there was no moisture or exudation.

Similar tumours were found on the dorsal aspect of the trunk, especially on the left scapula, but in none of them was the skin reddened or abrased.

The chest was slightly "barrel" shaped. The percussion note over the upper lobe of the right lung was somewhat impaired both back and front and there were signs of deficient air entry to this region. Fine crepitations were heard over the right apex posteriorly and the expiratory murmur over the whole of the upper lobe of this lung was prolonged and blowing. The physical signs in the other regions of the respiratory tract were healthy. In addition the patient had marked inspiratory stridor. There was slight frothy expectoration but no tubercle bacilli were discovered. A laryngoscopic examination kindly made for me by my colleague Dr. J. B. Ball showed that there was no paralysis of the vocal cords and nothing could be seen to account for the inspiratory stridor.



A case of multiple sarcoma.

The heart sounds were normal. The liver extended almost to the umbilicus and the lower part of its anterior surface could easily be felt—it was hard, nodular, and somewhat tender to the touch. The bladder and prostate gland were healthy. No evidence of ulceration or of new growth could be discovered by rectal examination. The urine was free from albumin and sugar and was quite normal in specific gravity and reaction. The bowels acted regularly. The patient complained of slight dyspnœa and cough which prevented him from sleeping and for which a linctus containing opium was prescribed.

The question of diagnosis at first was difficult to decide. The disseminated character of the growths and their rapid invasion made one think of mycosis fungoides but the absence of a history of previous extensive skin disease (although a slight eczematous patch was still to be seen over the inner side of the left ankle) and the dryness of the surface of the tumours led one to reject this diagnosis.

Acting on the supposition that the disease might be tuberculous and pending a microscopical examination of the tumours, shortly after admission half a grain of sodium cacodylate was injected subcutaneously twice a day. This caused pain in the tumours generally and this reaction continued so long as the injections were being made. But the sudden onset of the disease, its rapid spread and wide dissemination, and the secondary affection of the respiratory tract, which was proved to be non tuberculous, all tended to the diagnosis of sarcoma Meanwhile, in order to settle a definite diagnosis one of the smaller and less advanced growths was, with the patient's consent, excised, and after being duly hardened it was prepared for, and examined by, the microscope The evidence which this afforded proved that the growths were those of sarcoma of the small round-celled variety. *An unfavourable prognosis was given* and the patient shortly afterwards expressed a wish to go to his home in the country

By the courtesy of Mr. Streeten I have heard that the patient died towards the end of February, seven months after the first signs of the disease were noticed "The only fresh symptom which he had was urgent dyspnœa in paroxysmal attacks, one of which proved fatal No autopsy was allowed, though the patient expressed a wish that one should be made"

Seymour-street, W.

A CASE OF ACUTE ARSENICAL POISONING.

BY R E SEDGWICK, B A , M B , B C CANTAB ,
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DEATHS from acute arsenical poisoning are sufficiently rare to make the notes of such a case and of the subsequent post-mortem examination of interest and value.

On March 24th, 1903, at 5 30 A M , I was called to see a man reported as "very ill and almost dying" On arrival at the house, 20 minutes later, I found the patient on his bed, dead He was lying on his back with his left knee drawn up and his arms extended His hands and feet were cold, as were also his nose and face, while his body was warm He was well developed and well nourished but his eyes were sunken far in their sockets and a general pinched expression on his face gave him an appearance such as is *frequently seen in a child* with epidemic diarrhœa The room was poorly furnished but clean , there were no signs or traces of vomited matter or fæces either in the chamber (which was empty) or about the floor and bed On the dressing table was a glass mineral-water bottle containing about two drachms of slightly milky fluid

The history obtained was as follows The patient, who was a labourer at a glass-works, had always enjoyed good health On March 23rd he was quite well, had his breakfast with the rest of the family (who were well), and went to work He returned home about 2 30 P M and vomited in the entry, stating that he was "bilious" He continued to retch and to vomit and was then given a bottle of "ginger beer," after which he seemed more comfortable and dozed on the sofa Shortly afterwards he had great abdominal pain, was violently purged, and again sick. He continued to be purged and sick until about 8 P.M , when he went to bed but without relief As he became so weak he was asked to *see a medical man but declined*, stating that "he didn't want one as he was going to die" At 5 A M on the next morning he became so "bad that I was sent for All inquiries led to no elucidation of the mystery and the body and the bottle of "mineral water" were removed to the mortuary by the police and the facts were duly notified to the coroner

Necropsy —On March 26th two days later, I made a post-mortem examination of which the following are the notes The body was that of a well-developed, well-nourished man, aged about 32 years, height 5 feet 9 inches It had been in the mortuary two days (48 hours). The weather was mild and damp The eyes were markedly shrunken in the sockets and the face had a pinched expression No putrefactive changes were visible and there was no post-mortem rigidity Slight venous con*gestion was visible on the buttocks. There were no external* marks of violence. The coverings and bones of the skull were normal The brain showed no venous hypostasis and the membranes were dry. The brain substances were normal; there were no hæmorrhages or ecchymoses The ventricles were dry, on section they were drier and firmer than normal The lungs were dry and crepitant, there was no posterior hypostasis At the apex of the right lung was an old scar which was [illegible]
normal , there were [illegible]
heart were empty [illegible]
in the right auricle [illegible]
ventricle , otherwise [illegible]
clean at the tip and sides , it was slightly furred at the back. The pharynx and œsophagus were normal , no redness or hæmorrhages were present The stomach contained about a pint of yellow turbid fluid in which were floating several large, whitish-yellow, opaque masses Some mucus settled on standing in which were a few green coloured particles. The external wall of the stomach was pink in colour except for about two inches along the pyloric third of the greater curvature where it was of a dusky scarlet colour The mesenteric glands along the greater curvature were enlarged to sizes varying from that of a bean to that of a Brazil nut and were soft, cherry-red in colour, and on section almost diffluent Internally the mucous membrane of the stomach was thrown into folds and was generally reddened and covered with a thin layer of slimy mucus In five or six places were patches of ecchymoses and petechiæ, chiefly lying along the greater curvature and the posterior wall, while in three places were adherent, whitish yellow, opaque masses, surrounded by an area of scarlet-coloured and reddish brown membrane, the largest and firmest of which corresponded to the scarlet coloured patch on the outer wall of the greater curvature There were no [illegible] characteristic
odour [illegible] coated with
slimy m[illegible]ally, the redness on close inspection being due to minute petechiæ The outer covering was bile stained and reddened The third part together with the jejunum was completely empty except for the mucus which, indeed, lined the whole of the intestinal tract The ileum in its lower 12 inches was slightly reddened and on one spot about eight inches above the ileo cæcal valve was a small crater-like ulcer of the size of a pea with a smooth base and a ragged, vivid scarlet edge. Two of the neighbouring glands were swollen, soft, and red The large intestine was empty , there was no trace of ulceration The liver was normal in appearance, it was dry on section. The gall bladder was empty The pancreas and spleen were normal Both kidneys were normal in appearance The capsules stripped easily The kidney substance was apparently healthy on section A few rather bright red [illegible]
the pyram[illegible]

An inque[illegible]
of the stomach contents, &c At an adjourned inquest held on April 28th inquiry elicited that the man, an agent for an insurance society, was in monetary difficulties and had been threatened with legal proceedings He had also been seen standing near a barrel of ready-mixed "frit" (which contained arsenic) *at the works about 11 30 A M He also* vomited about noon and once or twice between noon and 1 P M , when he left work.

Mr H Silvester, public analyst of the county borough of West Bromwich and Dudley, reported as follows —

1 *Contents of stomach* —One pint. Arsenic was present to the extent of 2 17 grains expressed as arsenious anhydride (As_4O_6)

2. *Portion of liver* (weight eight and a half ounces) —The portion of liver contained arsenic equivalent to 0 45 grain of arsenious anhydride

[illegible] duly contained arsenic

[illegible] as as follows Stomach [illegible] grain , and left kidney,

Carlisle

WIGAN MEDICAL SOCIETY.—A meeting of this society was held on July 14th In the absence of the President Dr Blair was voted to the chair After the ordinary business a paper was read (illustrated by lantern slides) by Mr Robert Jones on Injuries about the Elbow-joint The paper and the illustrations were very interesting and a discussion followed in which the following members took part Dr White, Dr Rees, Mr Brady, Mr Bowen, Mr. Graham, and Dr Blair A cordial vote of thanks was unanimously accorded to Mr. Jones for his paper.

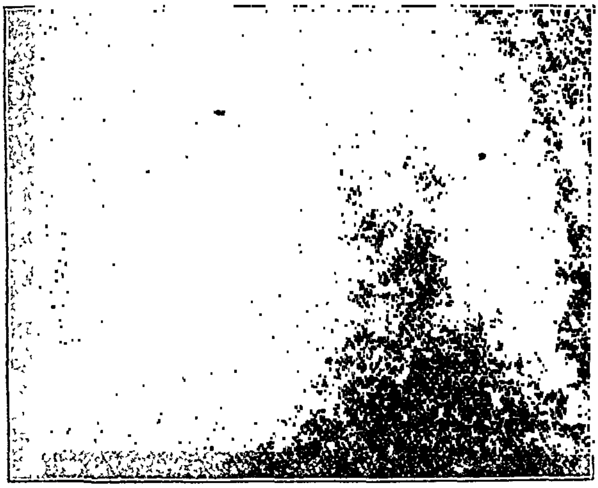
Clinical Notes:
MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A CASE OF TRAUMATIC PNEUMOTHORAX WITH SLIGHT SYMPTOMS.

BY R. STANLEY TAYLOR, B.A.,
ROENTGEN RAY ASSISTANT AT CHARING CROSS HOSPITAL.

THE patient, a boy aged six years, was taken to the hospital on Feb. 16th, 1904, with the history of having been knocked down and run over by a cab. There were a large scalp wound over the left occipital region and a superficial abrasion over the anterior ends of the right fifth and sixth ribs and costal cartilages, which were also somewhat tender on palpation but no definite evidence of fracture could be discovered. His respirations were a little laboured, varying from 36 to 40 to the minute; his colour was perhaps a trifle dusky and he had an occasional dry cough.

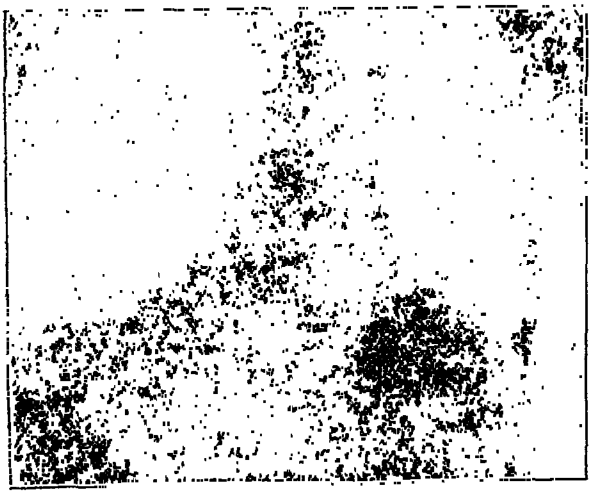
FIG. 1.



Skiagram showing appearance caused by collapsed lung.

The chest was not carefully examined at the time of admission but on the second day after the injury, when the first skiagram was taken, examination of the chest showed on the right side practically no expansive movement, very much diminished tactile fremitus, hyper-resonant percussion note everywhere, that below the clavicle being particularly tympanitic, and weak breath sounds of an amphoric quality. A satisfactory bell note could not be obtained. The left lung was normal. The apex beat was situated in the nipple line in the fourth space and cardiac dulness extended from this to the left sternal border, the heart being little, if at all, displaced. The heart sounds were normal.

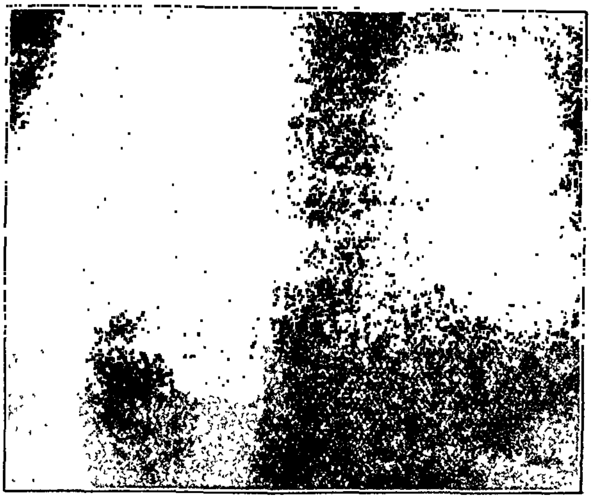
FIG. 2.



Skiagram showing lung to have increased in size.

A skiagram taken on Feb. 24th (Fig. 1) showed the whole of the right chest to be abnormally transparent to the rays with the exception of an area of the size of a Tangerine orange opposite the second and third spaces, presumably caused by the collapsed lung. The symptoms disappeared in a few days and he, except for his head injury, did not appear to have anything wrong. The lung, however, took a considerable time to expand, although a definite increase in its size was shown by a skiagram taken on March 10th (Fig. 2). A third skiagram taken on March 22nd (Fig. 3) showed the lung to have expanded over the whole right side of the chest and the normal physical signs were restored. The patient was discharged quite well on March 24th.

FIG. 3.



Skiagram showing expansion to have been restored.

The case is unusual in being one of traumatic origin, involving total collapse of the lung, but in which the concomitant symptoms were comparatively slight. The absence of any definite signs of fracture suggests the possibility of the condition being produced solely by rupture of the visceral pleura.

The x rays proved a valuable adjunct in diagnosis and the subsequent expansion of lung and absorption of air from the pleural cavity formed interesting subjects for the second and third skiagrams.

I am indebted to Mr. J. H. Morgan for permission to publish the notes of the case.

Charing Cross Hospital.

NOTE ON A CASE OF CÆSAREAN SECTION FOR RENIFORM RACHITIC PELVIS.

BY J. B. C. BROCKWELL, M.R.C.S. ENG., L.R.C.P. LOND.,
ASSISTANT MEDICAL OFFICER, POPLAR AND STEPNEY SICK ASYLUM.

A MARRIED woman, aged 22 years, a primipara, was admitted into the Poplar and Stepney Sick Asylum under my care on June 25th, 1903, at 4.30 A.M. Labour had commenced at about 6 P.M. on the previous evening, but the pains had ceased shortly before admission. On examination the patient was very short in stature (4 feet 3½ inches); the tibiæ were short and very curved with the convexity forwards; there was marked scoliosis with a dorsal curve the convexity of which was to the right; and the sacrum was depressed leaving a marked depression between the ilia. The external pelvic measurements were as follows: (1) distance between the anterior superior iliac spines, 10¾ inches; (2) distance between the widest points of the iliac crests, 11 inches; and (3) external conjugate, six inches.

The diagonal conjugate measured three and one sixth inches, two and a half inches at the most further examination per vaginam rum could be felt forming a projection *encroaching on the space of the pelvic brim*. The os uteri could only be reached with difficulty and was of about the size of a shilling and the fœtal head could with difficulty be made out above the brim.

As there had been no return of the labour pains and as the os was quite small it was decided to leave the patient to get a few hours sleep. I saw her again at 10.30 A.M. when the pains had just recommenced, the os had further dilated and a long bag of membranes was protruding through the os, whilst the fœtal head was still above the brim. The patient was then told that the treatment rested between embryotomy and Cæsarean section and the possibilities and risks of each were pointed out to her. She said that she would prefer to have a living child if possible but that she would leave the matter entirely in my hands.

Later A.C.E. mixture was administered and on passing the whole hand into the vagina the promontory of the sacrum was felt to make a much greater encroachment on the pelvic space than was at first thought, and the fœtal head was estimated to be considerably larger than is usual. Having *ascertained that the fœtus was alive* it was decided to perform Cæsarean section at once. Sänger's operation was chosen. The placenta was situated in front and was wounded *when the uterine wall was incised but by passing the hand* rapidly down a male fœtus weighing seven and three-quarter pounds was extracted by the neck without any difficulty; the placenta was then rapidly peeled off and all hæmorrhage ceased.

Both mother and child did very well except for some vomiting and severe pain during the first two days on the part of the mother, for which it was found necessary to give morphine, making an uninterrupted recovery and were discharged on July 31st.

NOTE ON A CASE OF CUT THROAT

BY *THE* RIGHT REV. J. E. HINE, D.D. OXON., M.D. LOND.,
BISHOP OF ZANZIBAR.

NOT *long since I sent notes of a case of abnormal delivery* which the Editors of THE LANCET were good enough to insert. Here is another example of the vital energies of primitive man when still unspoilt by modern civilisation. The history of the case is rather vague, but apparently the patient was living by himself in a small village near Magila in German East Africa. During the night a stranger entered the hut and without any apparent reason cut the throat of the sleeping inmate. I happened to be in the neighbourhood and the chief sent for me about 12 hours after the wound was inflicted to see if I could do anything for the relief of the victim. When I reached the place I found a strong young man with a deep and extensive wound across the throat just above the larynx. The air passages were not injured but there had been a great deal of hæmorrhage though the wound did not involve any of the larger vessels. The patient was much exhausted and some oozing of blood was still going on. Native medicines had been applied and I removed a quantity of black gritty material which looked like charcoal with which the wound had been packed. Several vessels had to be tied and the wound after having been cleaned as far as possible was closed with a few sutures and dressed with antiseptic gauze. Treatment of any further kind being impossible in the circumstances I told the people to carry the man to our nearest mission station, a distance of some eight miles, where he could be properly looked after by the nurses resident there. This they did the same night carrying the patient on a native bedstead. The road is very hilly and rough and the jolting caused a recurrence of hæmorrhage, so that he arrived in a state of great prostration. The nurses attended to him according to my directions which followed the usual lines for the treatment of such cases. The man kept quiet during the day, but that same evening the schoolboys happened to be holding a native dance in the quadrangle adjoining the room where the patient was lying. It appears that he was a famous dancer and the sound of the drumming so excited him that, cut throat whether or no, he could not refrain from getting up and in a few minutes he was in the midst of the crowd dancing his hardest, as though nothing of a serious nature was wrong with him. A native African dance involves bodily exercise of considerable vigour and it was not surprising *that after a time the hæmorrhage returned*. But the patient (if that is the right term to use of such a person) notwithstanding went on at his work closely followed up by his nurse who was making efforts to recapture him, until at length he fell down in a semi-fainting condition and was carried back to his bed. I saw him on the next day on my return and found him surprisingly well. The wound healed up rapidly and in about a fortnight he was able to go home.

In the days of my youth one of our professors used to tell us that under certain conditions we should do well "to follow the expectant method of treatment, and perhaps combine it with the exhibition of a placebo." This is the finest description of how to do nothing that the therapeutic mind ever conceived. In Africa it is an excellent method to follow. The expectancy is all on the side of the surgeon as you never know what your patient may choose to do next. And the "placebo" is what the patient pleases rather than his medical attendant. A wise combination of the double method is a sure way to fame if not to fortune.

Zanzibar.

A Mirror
OF
HOSPITAL PRACTICE,
BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via nisi quamplurimas et morborum et dissectionum historias tum aliorum tum proprias collectas habere et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

UNIVERSITY COLLEGE HOSPITAL.

A CASE OF SEPTIC MENINGITIS AND HERNIA CEREBRI FOLLOWING COMPOUND FRACTURE OF THE SKULL; RECOVERY.

(Under the care of Mr. R. T. H. BUCKNALL.)

A BOY aged 16 years was on Dec. 30th, 1901, thrown from a runaway horse and pitched head foremost against a rough hewn stone wall. He sustained a compound depressed fracture of the skull in the left parietal region and remained unconscious for 19 hours. Portions of bone and damaged brain were extracted from the wound soon after the accident and a small dressing was fixed on with strapping. 30 hours after the accident he arrived at University College Hospital and was admitted.

On examination the temperature was 101° F. and the pulse was 135 and bounding. The patient lay curled up on his left side, in a drowsy state with limbs flexed and eyes tightly closed. On being roused he would occasionally answer rationally but he usually responded to any interference or questioning by cursing, struggling, and striking out at those who examined him. His condition was typically one of marked cerebral irritation. The right pupil was slightly smaller than the left. There was no paralysis or anæsthesia anywhere. On removing the dressing a ragged and extremely dirty stellate wound of the scalp was exposed, the hair all round being matted with dirt and blood. The wound was about one and a half inches in its longest diameter, which ran obliquely forwards and upwards just below the parietal eminence. In the middle of the gaping wound fragments of bone and disintegrated brain tissue could be detected.

The head was shaved under an anæsthetic, the scalp wound was then found to lie three inches from the saggital suture and three inches behind a vertical line drawn upwards from the anterior margin of the external auditory meatus. After cleaning the scalp a flap was turned down with the wound at its centre, so as to lay bare most of the lower part of the parietal bone in its posterior half. A much depressed and comminuted area of bone was thus exposed one and a half inches long by one inch in breadth with a hole admitting the end of the thumb about its centre through which brain substance was exuding. From the anterior extremity of the depressed area a fissure ran directly forwards across the exposed portion of the parietal bone and apparently continued beneath the unreflected scalp. On removing the whole of the depressed bone, which was much fissured and very grimy, a hole in the dura mater one and a quarter inches long with a cross tear from its centre half an inch long was found. On enlarging this aperture bone and dirt were evident in the lacerated and bloody brain tissue beneath. It was then found that a considerable quantity of blood was lying between the dura mater and bone and also between the dura mater and brain in front of the point of injury and along the line of the fissured fracture in the parietal bone. On removing the clot free hæmorrhage ensued and the bone on each side of the fissure was chipped away, after incising and turning flaps of scalp up and down, in order to reach its source. When sufficient bone had been removed it was found that the hæmorrhage was due to tearing of the middle meningeal artery as it lay in the dura mater opposite the fissure, which crossed the artery at right angles. The ends of the meningeal artery were ligatured. All blood clot was now removed and the torn and dirty edges of the dura mater and scalp were cut freely away. All the damaged brain tissue was also freely removed. The cut margins of the dura mater were united by suture in front, the hiatus behind being left open at the seat of original injury. The scalp flap was reapplied and sutured, a gauze drain being led out of the posterior inferior angle and another out of the hiatus in the scalp, skull, dura mater, and brain resulting from the injury. Towards the end of the operation the pulse showed signs of failing but it rapidly recovered after intravenous injection of two pints of normal saline solution.

Immediately after the operation the temperature rose to 104° and the pulse to 156. Ptosis was present on the right side and the right angle of the mouth was retracted, causing the naso-labial fold to be deeper on this side (right facial spasm). During the same evening and through the night the patient was restless and delirious, continuously talking at random, shouting and spelling words, and repeating letters. No sleep was obtained in spite of bromides and morphine. There were no intervals of consciousness; the urine had to be drawn off. On the next day (Jan. 1st) he was a little quieter and would answer some questions rationally and complained of severe headache. The ptosis was less marked; the right side of the face was no longer retracted but was slightly paralysed instead, the distribution being impossible to detect with certainty. The temperature remained at 102° and the pulse at 120 throughout the day. He had not yet ceased vomiting. On the 2nd he had passed a better night but was still very restless. He became quieter during the day and the temperature fell to 99·2° and the pulse to 100 in the evening. No vomiting had occurred since the previous day. On the 3rd he was much worse. He awoke from a quiet sleep at 5 A.M. and after screaming a fit, commencing in the left arm and spreading to the left and then the right side of the body was observed. During the fit the head and eyes were turned to the left and the left side of the face was contracted. The fit lasted two minutes and consisted of clonic, followed by tonic, contractions. After the fit the left arm was found to be paralysed. The patient vomited with the fit. At 8.15 and 10 o'clock on the same morning two exactly similar fits occurred but consciousness was not lost in the last one. At noon the left arm was only paralysed below the elbow and the right ptosis and right facial paresis were less marked. The patient gradually became more restless and noisy and complained of his head. The temperature varied between 100° and 101° and the pulse remained about 100. Vomiting was now frequent. The reflexes were unaltered. On dressing the wound a hernia cerebri was beginning to project through the aperture caused by the injury and a smaller one protruded through the drainage hole further back. A little pus was oozing through the suture line of the flap so that the stitches were removed and the flap was re-opened. The herniæ were washed with pure alcohol and fomentations were applied to the whole area. On the 4th the condition remained the same; the patient was noisy and semiconscious. On the 5th the temperature rose from 102° to 105° and the herniæ were more prominent. He was even more restless and noisy, rolling about and yelling incessantly and vomiting at frequent and irregular intervals. During the 6th, 7th, and 8th the temperature varied between 103° and 105·4°, the pulse ranging from 105 to 120, and the respirations between 20 and 28. The patient remained very restless all the time but the herniæ cerebri became definitely smaller and the paresis of the left forearm and hand became less marked. The right facial paralysis and ptosis disappeared entirely. On the evening of the 8th the temperature fell to 99° and the pulse to 72. On the 9th the temperature reached 102° in the morning but fell to normal in the evening without any improvement, however, in the patient's mental condition. On the night of the 11th he slept quietly for the first time and was much better on the 12th when the herniæ were so shrunken as no longer to project beyond the skin. No vomiting had occurred since the 7th. From the 12th to the 15th improvement continued, though the temperature still shot up from 99° to 104° every morning. On the 14th advantage was taken of the patient's more calm condition to examine the eyes. The right disc was slightly ill-defined, the left was definitely swollen, and a few small hæmorrhages could be detected in the retina. From the 15th to the 20th the temperature never rose above 100° and afterwards remained normal. Meanwhile the patient gradually became quite rational and slept well, putting on flesh again very quickly. The scalp wounds were rapidly granulating and healing, and all signs of paresis in the left arm disappeared on the 18th. On the 19th the right disc was perfectly normal and the left was clearing rapidly. On the 30th the scalp was healed and he was otherwise well, but a subcutaneous abscess in the abdominal wall near the iliac spine had to be opened and drained. During the ensuing fortnight several similar abscesses formed beneath the skin in other parts. They all gave a growth of staphylococci on cultivation and appeared to be of pyæmic origin. The patient left the hospital at the end of February perfectly well. He has been seen frequently during the last three years and has had no trouble of any kind since his discharge.

Remarks by Mr. BUCKNALL.—The case is of interest for two reasons: (1) it is an example of recovery after the occurrence of symptoms indicating the presence of septic meningitis; and (2) it is an instance of the cure of a hernia cerebri.

As septic meningitis is so invariably fatal it is important in the present case to consider two questions: (1) was general septic meningitis actually present? and (2) if so, can any reason for the unexpected recovery be found?

1. The presence of typical meningitis appears almost certain on account of the character of the temperature, the fits, headache, vomiting, and delirium. It is also indicated by the transient paralysis and the presence of optic neuritis, for it is difficult to account for the combined exhibition of all these symptoms in any other way. It is just possible, however, to regard the fits and paralysis of the arm as due to the injuries just behind the right motor cortex and to regard the ptosis and facial paralysis as the result of hæmorrhage and inflammation extending to the third and seventh nerves on the right side. Even then, however, it would be difficult to assign a cause for the optic neuritis, restlessness, delirium, and vomiting or to explain the continued high temperature in spite of opening up the wound.

2. With regard to the question of recovery, the only cause that can be found for its occurrence is the very free and early drainage afforded by the large opening in the skull and dura mater which had to be made in order to cut away all damaged tissues and to reach the middle meningeal artery. From this aspect the case bears out the suggestion made by Sir Victor Horsley at the International Medical Congress at Berlin in August, 1890, that free drainage was the only treatment for meningitis likely to be successful. It may serve to encourage the adoption of this line of treatment therefore in the otherwise hopeless cases in which symptoms of meningitis have set in.

As an example of success following early interference also it may further serve to point out the advantages of laying open the skull as soon as possible, for it is well known that if septic meningitis is allowed to proceed the results of late operative interference are as disappointing as they are in septic peritonitis in similar circumstances. The advantages of a free opening of the skull and dura mater in these cases are at least two in number: 1. Such an opening tends to diminish the spread and virulence of the septic processes present by affording drainage and avoiding tension of the inflammatory products which would lead to greater local destruction of the parts and to a general rise of intracranial tension. 2. It also tends to prevent or to diminish the rise of intracranial pressure generally by opening the closed cavity of the skull and allowing a temporary protrusion of the swollen contents. In this way a dangerous rise of pressure which would otherwise prove fatal from cerebral anæmia may be tided over

As an instance of the cure of hernia cerebri the case also opens up the question of the correct treatment of this condition, concerning which very little information is to be found in the text books, where the pathology of hernia cerebri is also very imperfectly accounted for

Hernia cerebri occurs in two chief circumstances (1) in the presence of intracranial sepsis due to meningitis local encephalitis, or abscess, and (2) in the presence of tumours or gummata of the brain In each instance an aperture must exist in the skull and dura mater, either as the result of a depressed fracture or the removal of bone by necrosis or operation In tumour or gumma the hernia may occur after trephining whether the growth has been removed or not In abscess it may form even while the abscess is draining thoroughly In most cases, however, in which it occurs with abscess post mortem evidence goes to show that drainage has either been imperfect or else a second unopened abscess has coexisted

The actual causes which lead to the protrusion of the hernia are two in number 1 In all cases there is a rise of intracranial tension, as shown by the flattening of the convolutions at the time of operation the optic neuritis, and the gradual changes in the pupils pulse, respirations and temperature which occur and which are due to pressure anæmia of the brain 2 In some cases there may also be local softening and swelling of the area of the brain which becomes herniated, rendering it more liable to become extruded After the removal of tumours of the brain a transitory hernia may occur It is due to the rise of general tension caused by the injury and hæmorrhage at the time of operation, and also to the congestion which may occur locally in consequence of thrombosis of adjacent cerebral veins After the skull has been opened and a gumma found and left untouched a hernia may occur owing to the general rise of intracranial tension due to the tumour alone It will rapidly subside, however, subsequently if potassium iodide is given as in a case I have observed in which marked optic neuritis and a post operative hernia due to a cerebral gumma disappeared concurrently,

In cases of cerebral abscess complicated by hernia the usual cause which leads to the formation of the hernia and prevents it from subsiding is the rise of intracranial tension resulting from imperfect drainage The difficulty of draining such abscesses with tubes owing to their becoming blocked by the semi diffluent brain substance in a comparatively short time is only too well known and in such cases I should suggest making a large opening in the skull and dura mater and removing a wedge of brain substance so as thoroughly to lay open the abscess cavity and to remove its wall if possible afterwards plugging with gauze from the bottom In a case of temporo sphenoidal abscess in which I adopted this treatment no hernia cerebri formed in spite of the presence of meningitis of the base The latter affection ultimately proved fatal six days after operation, being due to a separate infection resulting from necrosis of the inner wall of the petrous bone which was the seat of advanced disease resulting from otitis

In hernia cerebri accompanying septic meningitis and in local encephalitis due to compound fractures and other
causes rai softening and
œdema of both tend to
produce a to lead to its
subsidence relieved (1)
dura mater,
which can best
s of the large
eral ventricle,
such a hernia
in a boy I observed with a cerebral abscess The abscess was drained but symptoms persisted and a rapidly increasing hernia cerebri appeared A fruitless search for more pus led to the ventricle being tapped and recovery forthwith ensued

For the prevention and treatment of hernia cerebri, therefore, a free opening in the skull and dura mater appears to be necessary in all cases for the following reasons —

1 In cases of *tumour in which the tumour is removed*, to tide over the subsequent period of increased intracranial tension which is liable to occur and to lead to a hernia with dangerous pressure symptoms, if only a small opening is made

2 In cases of tumours which cannot be removed, to relieve tension and thus to prevent the formation of a hernia and also to prevent or to delay the onset of headache, vomiting, and blindness due to optic neuritis which would all rapidly come on if nothing were done or a small opening in the skull were made

3 In cases of abscess to pr

4 In cases of septic meningitis and local encephalitis to afford the only means of reducing the rising intracranial tension and diminishing the virulence of the septic processes present by affording free drainage and a temporary exit for the swollen intracranial contents

The rapid cure of the hernia in the case now recorded can only be ascribed to the free drainage afforded It is probable also that the relief of tension at this period afforded by the large aperture in the skull may also have prevented death from compression

The questions of shaving off the hernia itself or applying lead weights or caustics to it which have frequently been discussed, and which indeed are often the chief details of treatment referred to are of practically no importance as the herniated mass is only the outward sign of the pressure within the skull which is the real source of danger The mass is extracranial and it can do but little harm unless it blocks the whole aperture in the bone and dura mater and so prevents drainage in which case the latter should be removed more widely The recommendation to cut off the hernia to afford drainage because it only consists of granulation tissue and a very slight trace of disintegrated brain tissue is histologically correct but it is based on false surgical principles, as no better drainage is obtained and the hernia rapidly re forms though amputated repeatedly

QUEEN'S HOSPITAL, BIRMINGHAM

A CASE OF RETENTION OF URINE DUE TO THE PRESSURE OF A FIBROID TUMOUR OF THE UTERUS AT THE AGE OF 25 YEARS

(Under the care of Dr C E PURSLOW)

THE patient a single woman, was admitted into the Queen s Hospital Birmingham on Dec 16th, 1903 She stated that she was 25 years of age in the previous September She had always enjoyed good health with the exception of a winter cough Menstruation began at the age of 14 years and had always been regular *the last period occurring a fortnight* before admission The loss had been moderate and the periods had always been attended by pain, there had been no increase in either loss or pain lately Three weeks before admission she found herself unable to pass urine Mr A G O Irvine of Selly Oak was sent for and he passed a catheter, at the same time he made a vaginal examination and detected the presence of a tumour A week later the catheter was required again and subsequently while waiting for admission to the hospital there were further attacks of retention of urine necessitating the use of the catheter on each occasion

On admission the patient was a healthy looking woman except that she had a slight dusky flush on each cheek Examination of the chest showed that the heart was enlarged, the apex beat being displaced outwards and that there was a well marked presystolic thrill with a loud double mitral murmur Nothing could be felt on palpating the abdomen but on making a vaginal examination a smooth rounded mass could be felt filling up the posterior part of the pelvis, bimanually this could be identified as a uterine tumour The sound passed four inches in the normal direction and on the *front aspect of* the tumour Uterine fibroid was diagnosed and the circumstances were held to justify surgical interference

Operation was performed on Dec 19th The abdomen was opened in the middle line and the uterus and tumour were
removed by
removed but
allowed to re
the wound healing by first intention and she has since returned to her situation and is now performing all her duties as formerly There has been no further trouble with micturition

The uterus with the tumour after removal weighed 1 pound 9¼ ounces The tumour was seen to be situated in the posterior wall of the uterus separated by a thin layer of tissue from the uterine cavity, the latter being spread out over its anterior surface. Dr. Stanley Barnes, pathologist to the hospital, kindly made a microscopical examination of the tumour and reported that it was a fibromyoma, containing more unstriated muscular tissue than is usually found in those tumours.

Remarks by Dr. PURSLOW.—The noteworthy point about the case is the age of the patient. So far I have been able to discover only one recorded case in which retention of urine due to the pressure of a uterine fibroid has occurred at so early an age and that is mentioned by Dr. C. J. Cullingworth in a paper entitled "An Analysis of 100 Cases of Uterine Fibromyoma," which appeared in the first volume of the *Journal of Obstetrics and Gynæcology of the British Empire*.

As regards treatment all authorities are agreed that repeated attacks of retention of urine due to the pressure of a uterine fibromyoma are an indication for surgical interference. Hysterectomy was performed in this case as the situation of the tumour and its relation to the uterine cavity appeared to contra-indicate myomectomy.

I am indebted to Mr. Irvine for kindly supplying some of the notes of the case and to Mr. E. L. Clay, obstetric house surgeon, for valuable assistance in its treatment.

Reviews and Notices of Books.

Handbuch der Allgemeinen und Lokalen Anaesthesie für Aerzte und Studierende. (Handbook of General and Local Anæsthesia for Practitioners and Students.) By Professor F. Z. DUMONT of Berne. With 116 illustrations. Berlin and Vienna: Urban and Schwarzenberg. 1904. Pp. 234. Price 7 marks.

Die Chloroform und Aethernarkose in der Praxis. (Chloroform and Ether Narcosis in Practice.) By Dr. KOBLANCK of Berlin. Wiesbaden: J. F. Bergmann. 1904. Pp. 42. Price 1.20 marks.

Professor Dumont's work is divided into three main portions dealing respectively with general anæsthesia by inhalation, general anæsthesia by spinal injection, and local anæsthesia. The book is clearly written but is marred by being too much of a compilation, with too little of the author's own experience and observations. The illustrations are good. Local or regional anæsthesia is very fully dealt with and obviously many substances have been used for this purpose abroad with which we are unfamiliar in this country. Yet their very multiplicity suggests that no one of them has proved to be satisfactory, and, indeed, Professor Dumont's excellent discussion of local and general anæsthesia in comparison shows him to be, generally speaking, an enthusiast for the latter rather than for the former process. In this connexion the tables which he quotes from Mikulicz are deserving of notice. Mikulicz found to his surprise that the occurrence of lung troubles after laparotomy was not in the least affected by employing local instead of general anæsthesia. Only in gastrostomies did there appear to be any difference in favour of the local method. In all other cases results slightly favoured general anæsthesia or were almost the same with the two processes. If other surgeons could repeat Mikulicz's comparison a most important lesson might be learned with regard to those after-effects that are urged as a contra-indication of general anæsthetics in laparotomies. Careful notes, however, must be provided of the nature of the general anæsthetic employed and the method by which it is administered. These are wanting in Mikulicz's tables as quoted by Professor Dumont. The author speaks favourably of ethyl chloride as a preliminary to ether but unfortunately gives no information as to how wide his experience has been of this anæsthetic sequence. "Combined narcosis"—i.e., anæsthesia by means of ether or chloroform preceded by morphine in various forms and combinations—seems to be a very favourite method on the continent. The advantages which Professor Dumont claims are lessened secretion of mucus and the like, prevention of reflex syncope, diminished after-sickness, and great economy of chloroform. He seems to think highly of ethyl chloride and quotes statistics of 16,000 cases with one death. Ethyl bromide he considers a very dangerous anæsthetic. Generally speaking his favourite anæsthetic seems to be a mixture of ether and chloroform in the proportions of 1 to 2 parts.

Dr. Koblanck's little book does not call for much comment. Its scope is, as indicated by the title, strictly limited. Nor is there in it much evidence of experience or of any new observations. Dr. Koblanck prefers to avoid general anæsthetics in face operations, an opinion in which many surgeons will disagree with him. He considers gout a serious contra-indication for ether and chloroform but does not explain why. His consideration of the mental or psychical attitude of the patient in relation to the taking of anæsthetics may be alluded to as being particularly worthy of perusal.

A Text-book of Clinical Anatomy for Students and Practitioners. By DANIEL N. EISENDRATH, A.B., M.D., Professor of Clinical Anatomy in the Medical Department of the University of Illinois, &c. With 155 illustrations. London, Philadelphia, and New York: W. B. Saunders and Co. 1903. Pp. 515. Price 21*s.* net.

Professor Eisendrath's is the latest addition to the number of text-books of applied anatomy of which there has been so plentiful a supply of late years. It is a lavishly illustrated octavo volume of convenient size but of great weight. In the words of the author "its object is to serve as a bridge for both practitioner and student from the descriptive anatomy, as it is usually taught in the first two years of a medical course, to its daily application at the bedside, in the clinic, or in the operating room." We think that Professor Eisendrath has achieved his design and at the same time has succeeded in presenting his matter in an attractive and interesting manner. The arrangement adopted is regional and in dealing with each region the parts to be recognised by sight or touch are first indicated; directions for surface-marking the deeper structures then follow; and finally a short exposition of the main clinical applications of the anatomical facts completes the section.

We have tested the information supplied in many directions and on the whole find it fairly full and accurate. There is nothing of striking novelty to note. There are some points, or rather, we should say, many, which will need amendment in future editions. We will mention a few of these. In Fig. 8, illustrating the relations of the cranial nerves, Meckel's ganglion is misnamed otic. The assertion that the nasal bones reach only to the level of the inner canthus is surely inaccurate. The attribution of stertor to buccinator paralysis ignores the soft palate which is the chief factor. To state that "the aorta reaches the vertebral column on the left side of the upper dorsal vertebra" is not illuminating. The surface marking given for the axillary artery in Fig. 96 is surely incorrect. The caudate lobe of the liver is certainly not the lobe so labeled in Fig. 72. The same figure gives an erroneous idea as to the complexity of the root of the mesentery. The surface relations of the lung in the right axilla as given on p. 153 do not agree with those in the accompanying illustration, which are more correct. The subclavian vein and artery do not lie beneath the pectoralis minor, as stated on p. 154, neither does the brachial plexus lie in front of the subclavian artery (or even in front of the axillary) in its second stage.

We are bound to state, and the few examples quoted above form our justification, that the book shows evidence of want of sufficient revision. This is a great pity as the plan is good and the applications are mostly up to date. The illustration of surface markings by photographs direct from the model has much to recommend it and imparts life to a subject which easily degenerates into a dry repetition of well-worn facts.

An Atlas of Human Anatomy for Students and Physicians. By Professor CARL TOLDT, M.D., assisted by ALOIS D. ROSA, M.D. Translated from the third German edition by M. EDEN PAUL, M.D. Brux. Second Section: Arthrology (Figs. 378 to 489 and Index). 1903. Pp. 94. Price 6*s.* net. Third Section: Myology (Figs. 490 to 640 and Index). 1904. Pp. 141. Price 8*s.* 6*d.* net. London: Rebman, Limited.

THE second section of Toldt's Atlas, translated by Dr. Paul, in every way equals in excellence the first. This fasciculus is a small one and is devoted to arthrology only. All joints are fully illustrated from various aspects and the translator has adopted the same system of terminology as in the previous section with the same happy results. We notice that the author does not figure so many facets on the articular surfaces of the femur and patella as is customary among English anatomists and in the shoulder-joint gives no distinct indication of the gleno-humeral bands as ordinarily described. In other respects the illustrations closely follow the conventional lines.

The third section is what it purports to be—*viz.*, an Atlas of Myology—and is practically confined to this subject. The plates showing dissections from superficial to deep parts are admirable but what strikes us is that this arrangement, whereby the muscles are dealt with by themselves and with all reference to the nerves that supply them or the blood-vessels and other structures which lie in relation to them omitted, is one which is rather artificial. There are some excellent plates in a supplement dealing with the anatomy of the inguinal and crural canals in relation to hernia. Practically in these plates alone are the relations of the blood-vessels and adjoining structures figured. We are glad to see the introduction of groups of muscles long since classified together as synergistic and their antagonists acting on a particular joint. A limited number of figures are devoted to the minute structure of muscle. A useful general illustration is given in *Fig.* 505 showing the relations of the fasciæ in a limb to the various muscles and to the bones.

As showing the general plan of the work we may take the plates on the muscles of the back, Figs. 507 to 514. One plate is devoted to the superficial muscles and so on in succession until the deepest structures are reached, and finally there is an outline diagram showing the skeleton on which the origins and insertions of the long and short muscles are indicated by different coloured lines.

Several dissections are shown, more especially of the limbs, in which the attachments only of the muscles to the bones are left and indicated in colour (Figs. 565, 567, 573, 577, 609, 610, and so on). Some of the dissections showing the muscles passing between the lumbar vertebræ and the hip-bone—e.g., Figs. 592 and 594—give views that are not commonly found in English text-books. There is a very complete index.

LIBRARY TABLE.

Africa and National Regeneration. By E. F. CHIDELL. London: Thomas Burleigh. 1904. Pp. 78. Price 1*s.*—The preface to this, the second, edition of this pamphlet is rather longer than the whole of the first edition. The author avers that there is pressing need for the utmost haste in settling in Africa a large population of Britons, where there is land, the best and richest of all her wide inheritance, of which England has not yet abdicated the sovereignty, a land of the size and possibilities of which the home-staying Englishman finds it difficult to form a correct conception. He reminds the public that medical science will ultimately solve the problems presented by tropical diseases and that these advances will much enlarge the profitable range of the white man in Africa. Mr. Chidell writes that "attention has been drawn to the supreme importance of land, to the absolute necessity of it to a State that hopes to play a leading part in human destinies. That England, or the British Empire as at present constituted, can continue to rank for an indefinite time with such coherent and colossal aggregates as Russia, the United States, and perchance before long China, is a supposition unsupported by the facts of the case. For land is the primary need of man; his other material wants resolve themselves into dependence upon it; and the greatness of States is principally measured by it." He advocates the settlement by the State of a population in Africa from the British Isles at the rate of about a million persons a year and offers many suggestions as to how this may be carried out.

Intercolonial Medical Congress of Australasia. Transactions of the Sixth Session held in Hobart, Tasmania, February, 1902. Published under the direction of the Literary Committee by GREGORY SPROTT, M.D. Glasg. Tasmania: John Vail. 1903 Pp. 480.—The delay in issuing these Transactions has been caused by pressure of work in the Government printing office and to some extent by authors not returning proofs as speedily as they might have done. Some of the papers have already been published in various medical journals. In the Introductory Address on Cancer. Dr. H. B. Allen, professor of anatomy and pathology in the University of Melbourne, draws the general conclusions that malignant tumours in young people show no recent sign of increase; that among the external cancers, those of the face and lip in males appear to be less frequent than formerly, while cancer of the breast in women has also decreased; that uterine cancer has only slightly increased, the rates for women under 55 years of age being lower than they were 30 years ago; and that the apparent increase of cancer is most marked in old people and particularly in women aged 75 years and upwards. Dr. Allen is strongly of opinion that most of this apparent increase is fictitious, being due partly to changes in the age distribution of the population and partly to more regular medical examinations, better diagnosis, and more explicit registration. The cancer statistics of Australasia, compared with those of England and Wales, show that the rates are decidedly lower for males and for females, and this both for all ages and at almost every period of life except for persons aged 75 years and upwards. The work of the congress was divided into five sections—viz., Medicine, Surgery, Eye, Ear, and Throat Section, Gynæcology, and Public Health. Excluding the presidential addresses there were contributed 14 papers in the section on medicine, 17 in the surgery section, 13 in the eye, ear, and throat section, 9 in the section on gynæcology, and 12 in the public health section. The papers are printed in this volume; among them is a paper on Adenoids in Adults by Mr W. Kent Hughes of Melbourne. There is a good paper on Some of the Rarer Forms of Eye Diseases met with in Tasmania by Dr. G. Heuzé Hogg of Launceston, which is illustrated. The clinical matter throughout the volume is evidence of the excellent and high-class work which is being done by the practitioners of Australasia.

How to Become a Certified Midwife. By E. L. O. APPEL, M.B., B.S., B.Sc. Lond. London: The Scientific Press, Limited. 1904. Pp. 29. Price 1*s.*—The legal requirements of the Midwives Act differ somewhat in different cases. Dr. Appel in this little book, which is well written and well arranged, sets forth these requirements in such a way that a woman can by referring to the table of contents find those which are applicable to her case. The pamphlet is divided into three chapters. The first chapter deals with certification and how to become certified before March 31st, 1905, and after that date. The second chapter gives the rules and regulations issued by the Central Midwives Board, which the certified midwife will be required to obey. The final chapter deals with her relations and duties, as a certified midwife, to the local authority of the area in which she intends to practise as a midwife. There is an appendix of the names of approved institutions under Section C of the rules of the Central Midwives Board and of institutions the certificates of which are accepted as qualifications under Section 2 of the Act.

JOURNALS AND MAGAZINES.

Medical Electrology and Radiology.—Three articles published in the June number are continued in July—namely, those on the Treatment of Affections of the Gastro-intestinal Tract, by Dr. George Herschell; on the Application of High-frequency Currents, by Mr. C. A. Wright; and the Lectures on Physics applied to Medicine, by Sir Oliver Lodge. The meetings of the British Electrotherapeutic Society are reported at considerable length as usual. The July number also contains articles on the X Rays in the Diagnosis of Joint Conditions and on Treatment by Blue Light.

Caledonian Medical Journal.—The opening article in the July number is a Plea for More Accurate Clinical Observation by Dr. James Mackenzie of Burnley, the author of an excellent work on the study of the pulse by means of various recording instruments such as the sphygmograph. Other contributions are on the Medicinal Plants found in the Scottish Highlands, by Mr. Henry White; on Heredity in the Scottish Highlands, by Mr. A. Macdonald; and on the Use of Alcoholic Beverages in Scotland about the Year 1735—namely, before the consumption of whisky became generalised.

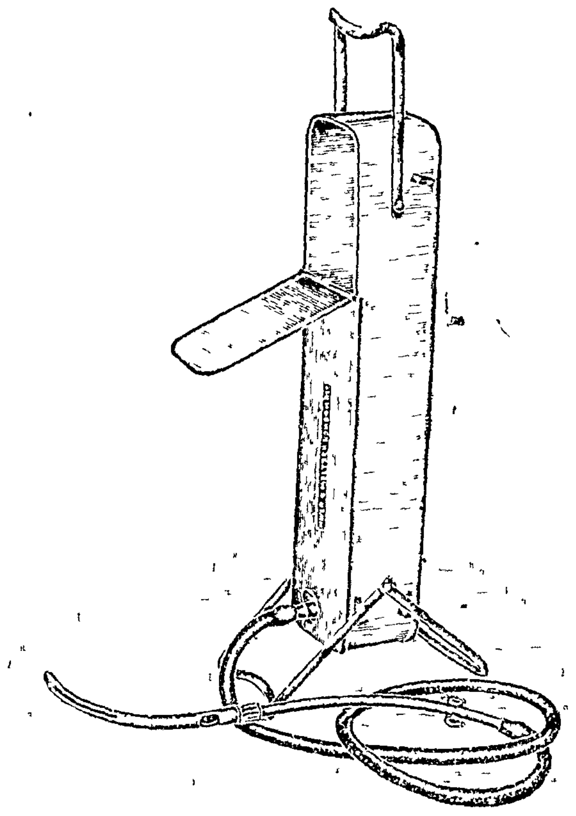
Journal of the Irish Medical Association.—The July number is mainly occupied with a report of the annual general meeting of the Association held in the buildings of the Royal College of Surgeons in Dublin on June 7th. The leading article is on the subject of Superannuation for Poor-law Medical Officers.

New Inventions.

A HANDY AID TO CLEANLY MIDWIFERY.

Believing that any appliance which will make surgical asepsis, and consequently safety, easier of attainment in operative midwifery will be welcomed by the profession at large, especially if it does not entail carrying cumbersome apparatus, I append a description of a combined steriliser and irrigator which I have invented and have found very useful in my own practice. It is not heavy and not bulky, the measurements being 16 × 3½ × 2½ inches. It will therefore go quite easily into any ordinary midwifery bag and the forceps, douche tube, &c., can be packed inside it to save space. It consists of a kind of box, made of sheet copper, tinned inside, and having an opening at one end for five inches of its length, which I have found sufficient for the insertion and removal of any midwifery instrument. Near the other end is a hole, tapped to receive a screwed-in nozzle to which to attach rubber tubing. It is fitted with three supports which fold quite flat when not in use. Nos. 1 and 2 of these form the legs when the instrument is in the horizontal position in use as a steriliser, while Nos. 2 and 3 form a firm base of support when the instrument is in a vertical position in use as an irrigator. No. 1 can in this position be used as a handle or as a suspending loop.

My manner of using the instrument is as follows. On ascertaining that the application of forceps is likely to be necessary I put my forceps (Anderson's or the Barnes-Simpson pattern with metal handles), together with a Bozemann's douche-tube, into the steriliser, pour on boiling water from a kettle, and light the lamp. If the instruments are wanted immediately I usually put a clove hitch of thread on the ends of the handles to facilitate removal, but they can be removed by hand a very short time after boiling if the can be placed vertically first. Having removed them and allowed them to cool in the air till they are cool enough to use I lubricate with biniodide of mercury soap and apply them. By the time the third stage is over the water in the can is probably cool enough to use for douching; if not, as ascertained by thermometer, as cold *boiled* water is not usually available I have added some of the antiseptic (generally potassio-mercuric iodide) to some *cold* water while the instruments were boiling, so that by now the solution is quite aseptic and will produce when mixed with the hot water a solution of about the right strength. *This* having been added to the hot water so as to produce a mixture of the required temperature, the tube is connecte up and the irrigation proceeded with. I know that ther is much diversity of opinion respecting the necessity an even the advisability of douching; but I am speaking no of *operative* cases, and I use a douche in every case in whic my hand or any instrument has been introduced into th uterus. I do not advise the abandonment of our old frien the "Higginson," as it is useful for the preliminary vagina douche and also sometimes for rectal purposes.



The combined steriliser and irrigator has been very neatly made for me in polished copper, tinned inside, by Messrs. Mayer and Meltzer of 71, Great Portland-street, who have carried out my ideas very faithfully and with strict regard to both utility and portability, and to them I am indebted for an improvement upon my original design in the matter of attaching the supports. The steriliser as made is, of course, available for the general purposes of a steriliser as well as for its special use in midwifery cases. Its fluid capacity when standing vertically for use as an irrigator is about four pints.

Wm. Salisbury-Sharpe, M.D. Durh., M.R.C.S. Eng.,
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THE LANCET.

LONDON: SATURDAY, JULY 30, 1904.

The British Medical Association: The President's Address.

FOR the fourth time since its inception the British Medical Association has held its annual meeting in Oxford. At the first meeting in 1835 some 300 members attended, the second meeting was held in 1852, and the third in 1868. At this last meeting the total number of members of the Association was 3672 and some 500 of these were present at Oxford. To-day the Association numbers over 19,000 members and the number of members attending the meeting which commenced on Tuesday, the 26th, is about 1500. In his presidential address, which appears in another column, Dr. **WILLIAM COLLIER** recalls these facts, making them a pendant to the main subject of his address, "The Growth and the Development of the Oxford Medical School."

The teaching of medicine at Oxford is no new thing, for there is a tradition that at some time during the ninth century there was a Jewish School of Medicine existing in Oxford but this of course was before the foundation of the University. During the thirteenth century the great **ROGER BACON** lectured upon various scientific subjects, including probably medicine as it was understood in those days, and met with the reward which is commonly meted out to those who are in advance of their age. Passing over some 200 years it is curious to note that one of Oxford's most famous sons—namely, **LINACRE**—who was a Fellow of All Souls, who lectured on physic and who encouraged the teaching of medicine both at Oxford and Cambridge, was indirectly the cause of the blight which stunted the growth of the medical schools at both these universities by his foundation of the College of Physicians in London. In the seventeenth century the study of medicine at Oxford received enormous impetus through the influence of **HARVEY**, **SCARBURGH**, **WILLIS**, and **WREN** who, though known to everyone as an architect, is almost unknown as an anatomist. But despite great names such as **SYDENHAM** and **RADCLIFFE** the teaching of medicine at Oxford languished although many efforts were made to overcome the hatred, for we can use no other word, with which science was regarded at Oxford. **BUCKLAND**, the eminent geologist, lectured on that subject at Christ Church greatly to the horror of Dean **GAISFORD**. Apart, however, from the subject of his lectures **BUCKLAND** must have been a trying colleague, for he not only kept various wild animals in Tom Quad but also invited his colleagues to dinners at which strange meats such as crocodile and monkey were served. Two years after the return of **ACLAND** to Oxford in 1845 as Lee's reader in anatomy a new era was entered. **ACLAND** conceived the idea of a building under which all departments of the natural sciences should be housed and, for events move slowly in Oxford, eight years later—namely, in 1855—the foundation-stone of the museum was laid by the then Chancellor, the Earl of **DERBY**. This was the beginning of the revival of the Oxford Medical School and it is mainly due to the unremitting toil of **ACLAND** that the medical school has grown to what it now is.

Oxford has been unkindly called "the home of lost causes." It is not within our province to discuss the various political and religious movements which, having their birth in Oxford, profoundly affected the country at large, but the medical school, which at one time indeed seemed "lost," has renewed its youth. It has men and laboratories in which they may work, it has energy and the desire to do good work, but it is poor. The city of Oxford has no rich citizens like those who have given so generously to the Universities of Liverpool and Birmingham, neither can the clinical material for instruction which is available in Oxford compare for one moment with that which is always at hand in London or Edinburgh. But the University possesses one asset which is of incalculable value, the love and remembrance of her sons. There is hardly an Oxford man who will not say of his University,

> "Ille terrarum mihi praeter omnes
> Angulus ridet,"

and it may be that the attention which is now called towards the Oxford Medical School by the meeting of the British Medical Association can be made the foundation of an appeal for offerings towards the better endowment of that school. To heal the sick, to aid in lessening the sum of human misery, and to add even a little to our at best imperfect knowledge of the natural sciences is no unworthy task for that corporation the motto of which is "Dominus illuminatio mea."

The British Medical Association: The Address in Medicine.

IN delivering the Address in Medicine at the annual meeting of the British Medical Association held this year at Oxford Sir **WILLIAM CHURCH** selected as his subject "Our Sanitary Needs, with Special Reference to the National Health." He prefaced his remarks with an allusion to the last occasion on which the Association met at Oxford, namely, in 1868, when addresses were delivered by **ACLAND**, **ROLLESTON**, and **GULL**, who will always be remembered not only as ornaments of our profession but as leaders who accomplished much in the promotion of medical and surgical knowledge. He also pointed out that the meeting in 1868 was for another reason of unusual interest, for it may be taken as marking the date of "the parting of the ways." Up to that period the conceptions of the causes of morbid changes in the body were still practically those introduced by the originators of pathology, **MORGAGNI**, **HUNTER**, **CARSWELL**, and others, and it was only in 1867 that **LISTER** read at Dublin his paper on the antiseptic principle in the practice of surgery; it was at this time also that the possibility of the infectivity of tuberculosis began to be recognised generally. Thus the ground was prepared for the science of bacteriology but it was not until some years later that this branch of medicine was firmly established. The quotations from **GULL'S** address on Clinical Observation in Relation to Medicine in Modern Times showed how great is the abyss which separates the medicine of to-day from that of our immediate predecessors.

Passing to the main subject matter of his address Sir WILLIAM CHURCH proceeded to make some remarks on the principles of preventive medicine, pointing out that the exact knowledge based on scientific research and demonstration which has now been established of the cause and nature of disease has a greater influence on preventive or State medicine than on clinical treatment. It will not be disputed that, in the majority of instances in which the mortality of a disease has been lowered, this has been due to a lessened incidence of the malady brought about by improved hygienic means rather than by the introduction of new therapeutic measures. Sir WILLIAM CHURCH dwelt on the dictum (which cannot be too often repeated) that the health of the people, both bodily and mental, is the principal asset of the nation. Much has lately been said about the deterioration and the degeneration of the British population and we cordially endorse his hope that the committee of the Privy Council on the physical disability of recruits, now engaged in framing its report, may urge on the Government the desirability that a physical census of the nation should be taken from time to time and that the physical condition of the children in our primary schools should be recorded as regularly and carefully as their educational progress. In our opinion the most important note in the address was reached when Sir WILLIAM CHURCH referred to the powers possessed by the medical officers of health and the medical officers of the Local Government Board. There can be no doubt that he is correct when he maintains that neither in the Government nor in the country do they hold the position which they are entitled to command in virtue of their high qualifications and the importance of their duties. The explanation of this fact probably lies in the great ignorance shown by the mass of the population of the principles on which the regulation of the public health depends. The local sanitary authorities are prone to value their own ideas on hygiene more highly than the opinions expressed by the medical officers of health who have been specially trained in such matters, and as the tenure of the professional appointments is in great measure determined by those bodies if the officers have the courage of their convictions and refuse to accede to actions of these authorities undertaken against medical advice, very awkward situations may arise. Dismissal or suspension of a medical officer must be at once reported to the Local Government Board, but this fact does not obviate much trouble. During the past year the Council of the British Medical Association and its medico-political and public health committees have been engaged in framing a Bill which it was hoped might be brought before the consideration of the Government urging reform in the Public Health Department of the Local Government Board. Sir WILLIAM CHURCH quoted three clauses of the proposed Bill; one of which has direct reference to the point in question. The clause runs thus: "That both in the Local Government Board and in the local authorities the medical element should have greater weight and authority than at present and that the medical officers of health throughout the country should be responsible to the Local Government Board as well as to the local authorities." It is the latter part of the clause that should be particularly emphasised. The difficulties which have arisen as to the enforcement of the Vaccination Acts have proved how important it is that there should be a supreme control over the local authorities, especially in regard to medical matters. Unless such a control is enforced constant friction and difficulty will be experienced in carrying out sanitary reforms.

Sir WILLIAM CHURCH impressed upon his hearers the necessity of educating the public on a most vital question and of trying to convince them that efficient sanitation is not a fad on the part of medical men but that it is an essential matter which concerns every living creature. We have frequently laid stress on the necessity of medical practitioners taking advantage of every opportunity of instructing those with whom they come into contact in the elementary principles of preventive medicine. Such tuition, we believe, will have greater force in preventing disease and raising the general health of the people than any by-laws emanating from the local sanitary authorities, although these laws have their use in compelling those who refuse to be taught so to regulate their lives that they may not become sources of danger to their fellow citizens.

Sir John Simon.

THE death of Sir JOHN SIMON is an event of the first importance. Not only does there pass from among us one of the illustrious figures in Victorian medicine, but by our loss of the great pioneer in practical sanitation we are reminded that 60 years ago the most fruitful province of modern scientific research—namely, preventive medicine—was an untilled territory. To appreciate properly the circumstances in which SIMON began his labours in the field of public health requires a conception of times which already seem far back in our history. It is needful to remember that in the "forties" our modern doctrine that it is the duty of the State to seek out and to prevent causes of disease and death among its citizens was seldom advanced or admitted. There was, when SIMON began his life-work, no administrative authority in the country, central or local, that had any medical officer or medical adviser for sanitary purposes; the development of a science and practice of preventive medicine as we know them to-day was quite undreamt of. Of that science and practice SIMON, the first, and for many years the only, medical officer of health in London, and afterwards the head of the medical department of the Government from the year of its creation in 1855 to his retirement in 1876, must be considered as the founder and in some directions the creator. This is made abundantly clear in our detailed obituary which will be found in other columns of this issue of THE LANCET. In his work on "English Sanitary Institutions" SIMON has himself traced many of the circumstances and new movements which by the middle of last century had operated to prepare the public mind to respond in the way that it did to the call for sanitary reform and the prevention of disease. To adopt his phrases, "humanity during the eighteenth and early part of the nineteenth century had slowly become established as an essential and abiding factor in English politics" Underlying the current habits of thought regarding legislation and administration had arisen "a spirit so changed from that of the old times as virtually to be the adoption of new standards of weight and measure in politics" Among the early fruits of this new movement was a recommendation by the Health of Towns Commission that large towns should be given power to appoint medical officers of health The first town to obtain these powers was Liverpool which appointed the late Dr W. H DUNCAN in 1847 The City of London followed in 1848, obtaining Parliamentary powers for the purpose, and SIMON, being then only 32 years of age, held the office from that year to 1855 How the work that he then did led to his appointment as medical officer to the Privy Council, and how his grand conception of his official duties resulted in the formation of a public health service for this country are shown in our obituary notice The record of ability and industry is a marvellous one, and, above all, SIMON'S imaginative faculty must be noted Cultivated to an extraordinary degree, a linguist, a student of Oriental literature, the friend of artists, poets, and philosophers, he was able to think grandly, to project his mind into the future, to discern the real meaning of social evils as well as their probable *developments, and so to devise schemes of prevention and* amelioration that could never have occurred to more plodding if equally industrious spirits This it is to be a man of genius

Annotations.

"Ne quid nimis"

THE WIGHTMAN LECTURE

IN delivering the first Wightman lecture before the Society for the Study of Disease in Children Mr R Clement Lucas after alluding in a few sympathetic words to the circumstances attending the foundation of the lecture, proceeded to discuss the various diseases at one time believed to be constitutional and hereditary and to show what an extraordinary modification of view has taken place in reference to many of these diseases as the result of modern scientific discoveries The position of the majority of the so called diatheses as constituting an etiology behind which inquiry need not be made has been demolished by the discovery of particular organisms which are shown to be the causes of those diseases and which are proved to be infective and communicable from one person to another In this way tubercle, leprosy, malaria, and acute rheumatism have had an entirely new light thrown upon their modes of origin and means of extension, and Mr Lucas makes an interesting quotation from the classic work on medicine written by Sir Thomas Watson to show how the prevailing theory of hereditary transmission caused the best observers to shut their eyes to obvious instances of contagion because "a diathesis is not communicable from person to person" Next in frequency to "diathesis" as a cause of disease heredity was placed in all but the most modern treatises, and here Mr Lucas sums up present knowledge clearly, though his opinions will not escape criticism Passing in review the undoubted hereditary transmission of nervous diseases as well as of mental ability, he alludes to the observations of Langdon Down and Galton as to the relative ability of the children of members of the three learned professions law, medicine, and the church, of which law produces the largest number of distinguished descendants, medicine follows closely, while the descendants of the clerical profession show the largest proportion of weak intellects and the least amount of ability This has been explained by the relative mental activity of the parents and is an uncomplimentary comment upon the Protestant clergy as a whole, founded, some may think, on insufficient grounds With regard to the transmission of external defects and deformities Mr Lucas recalls to our attention with what tenacity such defects as suppressed, supernumerary, and webbed digits cling to certain families in spite of the constant introduction of fresh blood Referring to hare lip and cleft palate he alludes to an observation published by him in the Transactions of the Clinical Society for 1888, showing that the absence of a lateral incisor tooth in a parent may foreshadow a hare lip or cleft palate on the same side in the offspring To this he now adds a further observation that an ill developed lateral incisor in the mother may foretell a more serious defect in the same line of development in her child From these observations it may be concluded that the appearance of a deformity is often not so abrupt as at first sight it would seem to be Dismissing the influence of maternal impressions as unworthy of serious argument, he next shows that many deformities appear to date back to a very early period in the procreative process and it is suggested that an incompatibility between sperm and germ cell, such as produces hybrid deformities in plants, is not an unreasonable hypothesis to account for this fact Later deformities, seeing the number of physical defects associated with the lack of mental development, may be due to lack of controlling influence of the nervous system A defect in development once established is exceedingly difficult to eradicate, for what the lecturer terms the tyranny of the ancestor comes into operation in spite of every desire to escape from his influence Physical and mental deterioration are regarded as dependent on two factors—the defective health of the parents and the unhealthy surroundings and deficient food of the children Much as may be done by good air, food and physical and mental training for the child, he cannot escape from his ancestry and the upward development will be gradual in spite of every desire to hasten it But to this end philanthropy should be directed We regard the lecture as a vigorous attempt to dissipate many medical superstitions that have been impressed by ancient authorities and to bring medical thought up to the level of twentieth century knowledge in matters connected with heredity At the same time we congratulate the society on having been intrusted at this early stage of its existence with a valuable endowed lectureship, and we consider the example set by Mr Wightman of endowing medical lectures as one well worthy of imitation

THE CHILDREN'S COUNTRY HOLIDAYS FUND

WE have repeatedly written in support of this admirable organisation which in many ways has claims upon the public In a few short years the child will become an adult citizen and his good health or ill health will make all the difference between his being a useful or comparatively useless member of society In a recent issue of THE LANCET (July 9th, p 99) we called attention to a letter which Sir William J Collins, the chairman of the Education Committee of the London County Council, had written on behalf of the fund and we have now received an appeal from the Bishop of London, for the subscriptions in hand are nearly £2000 short of the normal amount at this date when there are over 15 000 children booked to be sent to the country for a fortnight's holiday on August 4th As the Bishop of London points out, the schools are standing empty in consequence of the summer recess and until they open again at the end of August

London can hardly contain the hordes of children who pour forth to play in every court and alley, and we agree with his lordship when he says that too many of these children have only exchanged the spacious school buildings for overcrowded rooms. Many children will no doubt have to be disappointed, for some £6000 are required to complete the programme of the committee of the fund, but £2000 are required immediately and we trust that the money will be forthcoming without delay. It is in the interest of the community as a whole no less than in the interest of the individual that we endorse the appeal which is being made on behalf of the fathers and the mothers of the next generation.

ENTERIC FEVER AT ELTHAM AND MOTTINGHAM.

IT is a somewhat remarkable fact that in these days when local government in some places has reached such a high standard of efficiency there should be other places wherein the ratepayers, being unable to obtain satisfaction from those whom they have elected to safeguard their health, should be compelled to call in outside professional assistance, and this notwithstanding the fact that at least one of the sanitary authorities here concerned possesses a medical adviser of distinction and recognised ability. Such, however, appears to have been the case at Eltham and Mottingham, where the repeated occurrence of enteric fever so alarmed certain of the ratepayers that a fund was subscribed and with it the advice of Dr. W. J. R. Simpson, the late medical officer of health of Calcutta, was procured. This fact is instructive in many ways. The inquiry took place at the end of 1903 but we have only quite recently received the report which Dr. Simpson made as to the occurrence. This may have been due to the circumstance that the ratepayers concerned may have been unwilling to draw public attention to the locality until efforts had been made to bring about a better state of affairs. As, however, Dr. Simpson, as a result of a recent visit, is unable to record any very material improvement in the conditions which his first report revealed we presume that the ratepayers are anxious to call to their aid that subtle power known as "public opinion." Dr. Simpson's report, though comprehensive, is a little difficult to follow and in the absence of the necessary information in the report we have had considerable trouble in discovering the sanitary districts involved. We conclude, however, with some hesitation, that Eltham is in the metropolitan borough of Woolwich and Mottingham in the Bromley rural district, and the corresponding sanitary authorities are, according to Dr. Simpson's report, in default. It would appear that in certain areas of these two places, the populations of which are not very clearly indicated, there were cases of enteric fever from 1898 to 1901 and that such cases were distributed in time as follows:—

1898	1899	1900	1901	1902	1903		
6	4	1	5	12	11	=	39

But before dealing with the cases as a whole six are thus eliminated. "The probable cause of one was the partaking of watercress, four were probably imported, and one seems to have been due to the eating of oysters about a fortnight before taking ill." This leaves 33 cases, and three of these formed "part of a small outbreak ...... which Dr. Davies, the medical officer of health, after inquiry, attributed to the milk supplied by a dairy at Eltham." The inquiry into the remaining 30 cases, ten of which occurred in 1902 and ten in 1903, seemed, Dr. Simpson thought, to point to milk as having been the most probable vehicle of infection and there are certainly several facts which are not inconsistent with this view. But we are not told what was the opinion of Dr. S. Davies or the other medical officer of health involved with regard to these cases and the elimination of the nine cases already referred to complicates the matter in one sense while it simplifies it in another. It would, we think, have been well had the milk-supply of all the cases been given. But the facts that 28 of the 30 cases which have been comprehensively dealt with were women or children and that the ten cases in 1902, as also the ten cases in 1903, were all supplied from one source, and that not the source of nearly the whole population, are decidedly suspicious. Neverthelesss, there are some lacunæ which want filling and the age and sex distribution of the population in the special areas involved would have enabled a better idea of the problem to be arrived at. We should, too, have liked a more detailed account of the milk-supply and some information as to whether any of the milk thought to be involved went elsewhere than in the specific rounds of the milkman suspected, whether any of it was sold to other milk vendors and, if so, with what results. The number of cases is so small that most detailed investigation is necessary to furnish adequate evidence for any thesis. Dr. Simpson passes over the water-supply in a somewhat cursory fashion, merely stating that "the water-supply of all the areas is obtained from the Kent Waterworks." It would have been helpful had some further information with regard to the separate mains and hydrants been procured, as the possibility of local contamination in a polluted soil such as this was shown to be has to be borne in mind. But the outbreak does not look to us quite like a water-borne outbreak and in the absence of a definite common cause more information with respect to the possibility of personal infection would have been of value. But whatever may have been the cause of the Eltham and Mottingham cases Dr. Simpson's inquiry has undoubtedly revealed the fact that the sanitary condition of the dairy farms from which the milk of the district was procured and the cleanliness of the cattle from which the milk was drawn were far from satisfactory. Moreover, there are certain facts which suggest that the udders and the legs of the cows may have become specifically fouled from the streams in which the cattle waded. If, therefore, the inquiry had led to improvements in this direction gratitude would be due to the ratepayers who have found the money for the inquiry. But, as is so frequently the case in circumstances such as these, no such improvement appears to be taking place in spite of the fact that Dr. Simpson has pointed out several matters which require rectification. Unfortunately the report contains but little reference to the powers under which these improvements might be made. For instance, we are still in ignorance as to whether the Bromley rural district council has made any regulations under the Dairies, Cowsheds, and Milkshops Order or whether any action has been taken under the Rivers Pollution Prevention Acts. It is always well to put before the local authorities the machinery by which the reforms suggested may be carried out. Unofficial inquiries of this nature are somewhat delicate proceedings and the relations of the medical man concerned with the officers of the local authority are apt to be difficult. But in cases where the local officers have advised their local authorities in vain, and the aid of the Local Government Board cannot be procured, the advice of an expert well trained in epidemiology and administrative methods may not be unwelcome. But the occasions must necessarily be rare.

THE ETIOLOGY AND TREATMENT OF ARTERIO-SCLEROSIS.

IN accordance with the wider growth of knowledge concerning arterio-sclerosis as a cause of disease and premature decay increased attention has been given in recent years to the early diagnosis and treatment of this morbid constitutional condition In THE LANCET[1] some months ago an account was published of the early diagnosis of arterio sclerosis In a recent discussion at the New York Academy of Medicine, a report of which is published in *American Medicine* of June 25th Professor J M Anders of Philadelphia and others dealt with the no less important matters of the etiology and treatment of arterio sclerosis Professor Anders divides the causes of arterio sclerosis into five categories first, toxic agencies such as syphilis, alcohol, and gout secondly over eating (excess of carbohydrate and nitrogenous food) thirdly, constant hypertension of the arteries produced by muscular overstrain as in some forms of athletics fourthly, aortic regurgitation, and, lastly the oncoming of senility (senile degeneration) Prophylaxis should, he says be begun in early life when a tendency to arterio-sclerosis is detected The diet should be carefully regulated over eating should be avoided, and the amount of nitrogenous matter (meat) consumed should be reduced to as little as possible Athletics involving much muscular exertion such as rowing wrestling, and weight-lifting, should not be indulged in, a little walking and daily massage being found sufficient to keep up the tone of the muscles Water, says Professor Anders, may be freely drunk, so as to promote perspiration and the free excretion of waste products by the kidneys Young men should be urged to moderation in games or feats of endurance Arterio sclerosis is not arrested but may be retarded by drugs especially the alkaline iodides nitro glycerine, and the nitrites, all of which tend to lower the excessive arterial tension which marks the oncoming of arterio sclerosis In the discussion which followed the above communication Professor Alfred Stengel of Philadelphia stated that for successful treatment the disease should be taken in hand before nephritis or angina pectoris has developed He has known arterio sclerosis to follow convalescence from infectious fevers, especially typhoid fever He urged that in all cases of convalescence from severe infectious fevers the period of rest and of abstention from work should be extended over several months during which a steady course of tonic treatment should be pursued before the patient is permitted to engage in active or arduous work Dr F Shattuck of Boston stated that alcohol should be absolutely forbidden to persons suffering from incipient arterio sclerosis, as indulgence in it, even to the slightest degree, aided the rapid development of the disease Dr C Stockton of Buffalo said that in addition to strict abstinence from alcohol, a careful and light diet, and the administration of iodides and nitro glycerine in small doses and for prolonged periods, the patient should be given vapour baths twice weekly Dr A Jacobi of New York spoke of the danger of cardiac lesions (dilatation and cardiac insufficiency) which could be obviated by attention to details of diet and exercise and the administration of suitable drugs Cases due to syphilis required careful and mild but prolonged antisyphilitic treatment

CANAL ANGLERS

IT is perhaps doubtful whether the attraction of angling in the canals with worm or other bait is as keenly felt in the south of England as it is in the north There are in the northern towns thousands of working men who will sit patiently hour after hour watching their floats, at the end of which time they may not be able to boast that they have even had "a glorious nibble" On the Saturday before last 700 such men sat at fixed distances for a length of four miles on the banks of the Macclesfield canal for nearly two hours They had time to smoke and to think, to bear out, indeed, Izaak Walton's statement that angling is the "contemplative man's recreation" 500 of them are said to have caught nothing The heaviest fish was just over eight ounces and the smallest, as the report puts it, "was a ponderous creature of two drams" At all events, it is a harmless amusement and affords to its devotees the opportunity of breathing comparatively pure air

THE PRESERVATION OF CHILD LIFE IN NEW ZEALAND

THROUGH the courtesy of the Agent General for New Zealand we have been furnished with a memorandum by the Premier of that colony on the preservation of child life Briefly stated the object of this publication is to assist the introduction into New Zealand by a special Act, of a widespread system of charitable relief in relation to the dangers, necessities and illnesses of childhood Under the provisions of this Bill no midwives will be allowed to practise who are not duly qualified and their registration will be insisted on A certain number of these certified women will be appointed in each district to attend poor persons gratuitously, their fees being paid out of the public funds Maternity homes will be established and maintained throughout the colony Hospitals will be erected and maintained expressly for the children of the poor A staff of trained nurses will be provided for gratuitous home attendance Day homes or crèches will be established for the reception of young children whose mothers are obliged to go out to work The expenses necessarily connected with these various undertakings will be paid by the State Further enactments resembling those in force in the mother country will be concerned with the prevention of cruelty to children Abuses arising from the insurance of young children will be controlled if not prevented, by limiting the amount to be insured in the case of any child under ten years of age to a sum not exceeding £5 The maintenance of illegitimate offspring will be secured in an equally practical way by compelling the guardian, mother, or alleged father to register the child—even a single child, be it noted—and by refusing the power to commute weekly or monthly payments with a capital sum It is impossible not to sympathise with the intention of those who have designed this plan of charity Certain of its clauses will meet with universal approval All are worthy of notice as indications of an honest endeavour to solve a social problem than which there is none more worthy the attention of any people—the well being of its children We admit the obligation in many cases to assist poor persons with medical service and nursing at the public expense We entirely concur in the resolution to put down cruelty after the methods which have proved so successful and so little irritating in this country We congratulate those who have gone a step further than ourselves to regulate the insurance of young children and to save the illegitimate from the cruelest subtleties of infanticide Having admitted so much it seems almost ungracious to resort to adverse criticism of details but too much help must not be proferred to people who can help themselves The so-called poor in New Zealand where the working classes are in a relatively prosperous condition, can do much to help themselves It would be an occasion of lasting regret and a cause of public damage if the principles of self help and parental responsibility—factors in the creation of a sturdy type of character to which our race is deeply indebted—were swamped, as there is some prospect of their being by the gratuitous generosity which the memorandum seems to contemplate Where there is destitution the case is different Here necessity calls for free service as an indispensable and for the most part as a temporary act of grace The poor man who can contribute somewhat towards the cost of treatment in illness, his own or that of others dependent on him, business, and the other is that all persons employed in slaughter-houses should be licensed. The need for the adoption of the first of these recommendations has long been insisted upon in our columns in the interest of man, and the other is one which will equally commend itself to those who have sympathy with the lower animals. We shall view with much satisfaction any efforts which are made by the lovers of animals to insure effect being given to the recommendations of the committee, which are evidently based upon careful observation and upon common sense.

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[1] THE LANCET, Jan 30th, 1904, p 316.

THE CONGRESS OF THE ROYAL INSTITUTE OF PUBLIC HEALTH.

(FROM SPECIAL CORRESPONDENTS.)

THE annual meeting of the Royal Institute of Public Health was this year held at Folkestone from July 21st to 26th, under the presidency of the Earl of RADNOR.

THE OPENING MEETING.

The first meeting on July 21st was held in the Pleasure Gardens Theatre, the proceedings being opened by the Mayor of Folkestone, Councillor GEORGE PEDEN, J.P., who welcomed the delegates and members.

Dr. WILLIAM R. SMITH (London), as President of the Royal Institute of Public Health, gave an account of the mission undertaken by that organisation. It endeavoured to spread the gospel of cleanliness among the poor and among the better classes. The children were of the greatest importance to the community and in this respect he believed that the Midwives Act would prove of great benefit. Every district also should have its nurse and the children should be trained in, and taught, the habits of health. He thought that in dealing with public health questions much could be done to unite more closely the colonies with the mother country and they proposed to create branches of the institute in the colonies. At the conclusion of his speech Dr. SMITH installed the Earl of Radnor as president of the congress.

The Earl of RADNOR replied, expressed his gratification, and alluded to the useful work of the congress. He spoke more especially of the question of milk-supply, on which so much depended, and insisted that this necessitated the spread of the principles of hygiene in rural districts where the milk was contaminated in the cans washed with the impure water of small wells. Indeed, the whole speech was a plea for more sanitation in the country districts that fed the great towns.

In the afternoon the real business of the congress began and the sections met at the Technical Schools. The business of the congress was conducted in five sections: (A) Preventive Medicine; (B) Bacteriology and Chemistry; (C) Engineering and Building Construction; (D) Child Study and School Hygiene; (E) Ladies' Section; and (F) (*a*) Tropical Medicine, and (*b*) Physical Training. In all valuable and instructive papers were read and discussed and the attendance in the Preventive Medicine and Child Study Sections was especially good.

SECTION OF TROPICAL MEDICINE.

Dr. W. J. SIMPSON, professor of hygiene in King's College, London, presided over this section and took for the subject of his address

Preventive Work in the Tropics.

He pointed out that sanitary measures, irrespective of the microscope and the laboratory, had achieved great triumphs. In the West Indies the lifetime of a regiment 1000 strong used to be estimated at about five years. This mortality, first ascribed to the climate, was shown to be due to removable causes and by improving the food-supply and water-supply and remedying the overcrowding a very different condition of things was brought about. In India the death-rate of the soldier had fallen from 80 to 16 per 1000. Dr. Simpson then detailed the great discoveries that had been made in tropical medicine in recent years, in cholera, plague, and Malta fever, in malaria, yellow fever, and sleeping sickness, and discussed the measures that were being taken and the results obtained in the campaign against malaria. Speaking of the Haffkine prophylactic against plague he said he doubted whether a fluid that had to be inoculated would ever be largely used on account of prejudice against this mode of administration and advocated experiment in the direction of finding something that would be efficacious when taken by the mouth.

As a result of the discussion that followed the section adopted this motion:—

> That this section of Tropical Medicine recommend the council of the Royal Institute of Public Health that it is desirable to approach the Secretary of State for India and Lord Curzon and lay before them the importance of a largely increased special sanitary service for India.

By request Mr. JAMES CANTLIE (London) then gave an address on

Beri-beri.

At considerable length he described the geographical distribution and treatment of beri-beri, following this up by giving the signs, symptoms, and alleged causes of the disease. In the past no attention had been paid to beri-beri but at the present time a dozen cases could be produced in London. It was peculiar how diseases became fashionable; beri-beri seemed to be fashionable to-day. People who had money invested in South Africa seemed to be paying much attention to beri-beri now and it was a good thing for the Empire, he declared, that at last they had taken notice of one of its greatest scourges. He explained the different types of the disease and mentioned places where beri-beri had largely existed, though under other names.

Dr. ALEXANDER CROMBIE (London) followed with a paper on

The Frequency and Causes of Atonic Dilatation of the Stomach in the Tropics.

This he ascribed especially to the habit of over-drinking at meals, some 50 per cent. of the cases being attributable to this cause alone. As an instance he said that at dinner many men thought nothing of taking half a pint of soup, two pints of aerated water during an otherwise ample dinner, and another pint or two pints of the same within the next one and a half hours. A similar distension of the stomach was practised, to a less degree perhaps, at breakfast and lunch, with the result that the organ in the course of a few years of such treatment accommodated its mechanical capacity to the demand made upon it. Digestion was at the same time delayed by this inordinate dilution of the gastric juice and sooner or later the stomach failed to empty itself before it was again deluged in a similar manner. Other causes were typhoid fever and neurasthenia.

SECTION OF PREVENTIVE MEDICINE.

Dr. W. J. TYSON, senior physician to the Victoria Hospital, Folkestone, presided over this section.

He was followed by Mrs. GARRETT ANDERSON, M.D. (London), who read a most instructive paper on

The Economic Value of Compulsory Vaccination at School Age.

She contended that it would be much cheaper to revaccinate than to maintain small-pox isolation hospitals. In Germany there were no small-pox hospitals. At Berlin in the ordinary hospital 12 beds were reserved for the few imported or chance cases of small-pox that might occur and this was for a population nearly half that of London. The British metropolis, counting the capital outlay, spent £30,000 a year for the isolation of cases of small-pox and the average of five years showed that they had only six patients per day to nurse. Unfortunately, and instead of continuing this discussion on the relative cost of isolation and of revaccination, a Mr. ROSE of Sandwich rose to denounce vaccination as "the greatest of frauds" and indulged in violent abuse. This caused other speakers to treat the general question of vaccination instead of the special phase which Mrs. Garrett Anderson had introduced.

Remarks by the President.

Friday morning was devoted to a very interesting discussion on milk preceded by the opening address from the PRESIDENT of the section. He pointed out that by the drainage of some marsh lands Folkestone had been entirely freed from the presence of ague. Much had also been done to reduce the frequency of tuberculosis, but, on the other hand, such a state of things as existed at Sandgate should be rendered impossible. There were present constantly some 300 phthisical patients living in the midst of a population of 2000 inhabitants and this in houses where little or no control was exercised over them. It was a grievance which the section would have to discuss. Then he alluded to the great epidemic of typhoid fever at Maidstone and to the fact that though much had been done in the surgical treatment of the wounded during the Boer war, a great number of soldiers died from typhoid fever and no serious attempt had been made to provide pure water during the campaign In regard to cancer, he thought that this disease was treated at the wrong end and that better results would accrue from preventive measures The infantile mortality was still equal to 1 in 7 within the first year of life To this the milk question was closely allied and the purity of milk depended upon farmers and dairymen who were not properly controlled by the rural sanitary authorities To boil and to sterilise milk not only tended to destroy its anti scorbutic properties but it gave an excuse to the farmers for their carelessness Finally, the President lamented, in the constitution of school authorities, the absence of technicians in regard to physical education For such purposes we should possess a Minister of Public Health

Dr J T C NASH, medical officer of health of Southend, introduced a discussion on

A Clean Milk supply

He said [illegible] came to [illegible] from the [illegible] a slight acquaintance with sanitary precepts must wonder at the marvellous natural protective powers of the human economy The cowshed in the country more often than not was an old wooden structure or barn insufficiently lighted and ventilated, [illegible] imperfect means of drain[illegible] lacking in every principle [illegible] the farmer and the cowman [illegible] production of clean milk supplies The public should know that it was possible to secure clean, wholesome milk and should insist and assist in every possible way in securing it It became necessary to insure systematic methods of cleanliness and expedition in the storage, transit, and distribution of milk The normal temperature of milk as drawn from *the body of the cow was extremely favourable to the rapid* growth of bacteria Therefore it was important to prevent the introduction of further extraneous germs by keeping the milk covered and to arrest the multiplication of existing germs by cooling the milk as soon as possible after it was drawn by passing it through a clean refrigerator or by storing it in an ice cellar No cowshed should be permitted to continue without a refrigerating apparatus in a separate building within easy access of the cowshed, so that the milk could be cooled down to a temperature of 50° F at once The conditions which at present prevailed as to the transit of milk by rail were in need of reform Special ice vans should be a *sine qua non* The importance of covering milk in order to prevent contamination by flies and dust had, perhaps, hardly been sufficiently realised heretofore Recently the Southend town council had passed a regulation under Article 13 of the Dairies, Cowsheds, and Milkshops Order of 1885, which had been approved by the Local Government Board and read as follows —

> Every retail purveyor of milk shall cause every vessel containing milk to be protected from dust flies and other *sources of contamination* by means of suitable covers

The Distribution and Sale of Humanised and Sterilised Milk

was the title of a paper by Mr Councillor SHELMERDINE (Liverpool) He gave an account of the municipal milk depôt in that city and its administration and the details of preparing and distributing the milk As regarded the results he said that without attempting to draw too close deductions the fact stood out that of the 4453 infants coming very promiscuously to the depots at varied ages and in conditions of health below the average the mortality was 78 per 1000 as against 159 per 1000 for the whole city But it must be remembered that in that 159 per 1000 for the whole city and 88 to 118 for the best districts, and 212 to 215 for the worst districts, were included also breast-fed infants, clearly if breast fed infants were excluded and artificially-fed infants only taken into account the rate of mortality amongst them would be enormously higher, and would show even more forcibly the advantages of the sterilised food which, of course, is an artificial food, over *other methods of artificial feeding*

Mr J PEARSON sanitary inspector of Folkestone, read a paper containing the most alarming description of an individual who for more than two years was employed to milk cows in several different towns and farms of Kent Wherever he went cases of typhoid fever occurred among those who drank the milk of the cows which he tended. Incredible as this may seem, the names and the fullest details were given and typhoid fever only ceased when the man having thus injured his own son's business was persuaded *to give up altogether his occupation of tending* and milking cows Mr Pearson thought that the rural authorities were composed so largely of farmers that nothing would be done unless some higher authority was brought to bear

Mr E J BISHOP read a paper describing a process of [illegible]

[illegible] As a rule they were anxious and eager for advice and wished to do the best for their children The town of Liverpool had done a good work but at a financial loss, for it had incurred in 1900 a deficit of £6310 to provide milk for 6295 children Also, there was the question of rickets and so on attributable to sterilised milk At best it was but a partial success The true solution, he maintained, rested in the municipalisation of the milk supply Taking the dairymen's own estimate that the goodwill of a cow was worth £10 and the cows £20 each for the 60 000 inhabitants of the borough of Bootle this would make a total for the purchase of the present animals of £12 960 A great economy in the dis*tribution of milk would be effected There would no longer* be three or four rival distributors in each street and even if they sold the milk at 1*s* instead of 1*s* 3*d* per gallon they would receive at least £34 127 a year The sale of manure would raise this income to £36 627 The annual expenditure would be £22,466 leaving £14,161 to pay interest on capital, depreciation, and the like The net profit would be considerable but the real benefit held in view was that of exercising absolute control over the milk supply They might therefore hope to be able to guarantee its purity

In the discussion which followed Dr E W HOPE (Liverpool) admitted the loss but said that they put health before cost

Mr WILLIAM HALL (Headingley, Leeds) said that he had examined 2000 poor Jewish children, dirty slum dwellers, and said that they were far healthier than Christian children living under better sanitary conditions This was due simply to the fact that they were better fed—namely, from their mother's breasts and not from the bottle

Sir CHARLES CAMERON insisted that the country dairies were much worse than those of the towns

Professor M HAY (Aberdeen) wanted owners of dairies to obtain sanitary certificates which would be of use to them commercially while affording some security to the public

The general sense of the section was in favour of compulsory inspection organised by a superior authority which could not be influenced by local interests

The Adulteration of Milk

was the subject of a paper by the Rev Canon HORSLEY, chairman of the public health committee, Southwark He dealt with the statistics of adulteration in various towns and concluded that in order to encourage the honest and to discourage the dishonest traders at least four samples should be examined yearly *from every* dealer

In the afternoon Dr C KILLICK MILLARD, medical officer of health of Leicester, caused some excitement by reading a paper on

The Utility or Otherwise of Isolation Hospitals

Considerable misapprehension existed and it took some *time to dispel false impressions* Dr Millard did not challenge the use of such hospitals but urged that there had been some abuse in regard to one single disease—namely, scarlet fever Nor did he mean that no case of scarlet fever should be sent to an isolation hospital He was in favour of isolation but thought isolation at home was preferable when it could be practised He gave a number of figures to show that where this had been done the results were quite as good and were attended with less risk to the patient He therefore advocated an inquiry into the matter and proposed the following motion —

> That as the hospital isolation of scarlet fever has now been tried on a [illegible] a doubt exists as to whether the [illegible] the cost, it is desirable, in the [illegible]itative inquiry into the subject [illegible]

This was seconded by Dr A M FRASER (Portsmouth) in a brief speech

Mr T W N BARLOW (Bootle) said that, to his mind, the crux of the whole question lay in the possibility and efficiency of home isolation and that in towns where home isolation could not be depended upon fever hospitals were indispensable and without them scarlet fever would run riot much as measles did at present.

Mr. H. BEALE COLLINS (Kingston) supported Dr. Millard's view. He said that in Kingston, a town of suburban villas, home isolation could be efficiently carried out as a rule and that it was not necessary to remove more than 7 per cent. of the cases to the hospital.

Dr. KENWOOD dissented from Dr. Millard's views. Perhaps too many cases were now removed to hospital but he regarded hospitals as valuable not only for isolation but also from the point of view of treatment alone.

Dr. SIMPSON said that he had attacked isolation hospitals and their administration but not isolation. He regarded the cubicle system as it obtained in Paris as the ideal one.

On a show of hands the motion was declared carried by 33 votes to 20.

SECTION OF BACTERIOLOGY.

Professor KLEIN, the President, opened the proceedings with an address on

The Aim and Scope of the Bacteriological Analysis of Water and of Shell-fish with reference to Sewage Pollution.

He dealt with the methods, data obtained, and their significance and severely criticised the methods and reports of the metropolitan water examiners.

Dr. R. T. HEWLETT (London) then presented the report of a committee appointed at the last congress to inquire into the standardisation of methods to be employed in the bacterioscopic examination of water. A committee of representative bacteriologists had carefully considered the subject and had drawn up a scheme which, if adopted, would conduce to a systematic and uniform procedure. On the motion of Dr. Hewlett it was resolved that a copy of the report should be forwarded to the Water Board of London.

Mr. A. G. R. FOULERTON (London) then read a paper on

The Pollution of Tidal Waters by Sewage.

It was a lengthy contribution abounding in analytical and statistical data and an important contribution to the subject. It was briefly discussed by Dr. SAVAGE and the PRESIDENT.

SECTION OF CHILD STUDY AND SCHOOL HYGIENE.

Sir GEORGE KEKEWICH, K.C.B., presided over this section and gave an address on

The Physical Education of Our Children.

He said the subject comprised not merely physical exercises and physical training but the conditions under which children lived both at school and at home. With regard to the schools the Board of Education had not done, and was not now doing, its duty in regard to seeing that suitable buildings were provided. Tenderness for the pockets of the owners of schools meant cruelty to the children. With regard to the expenditure, although there might be no return in actual coin of the realm, it would be a good outlay, inasmuch as the poorhouses and hospitals would be less crowded.

The Teeth of Children in Relation to Public Health

was the subject of a most interesting paper by Mr. J. G. TURNER.

Dr. HARRY CAMPBELL (London) discussed

The Evil Effects of Too Soft a Diet in Children.

He advocated "that the child should begin to take hard solid foods at the seventh month, when he should be allowed to gnaw at chop bones and chicken bones and to eat hard leathery crusts, biscuits, sugar cane, and certain fruits. In this way the instinct to masticate is afforded due opportunity to develop; when the child has learnt to masticate by instinct, and not till then, a limited quantity of the softer farinaceous foods may be permitted."

Dr. T. WHITEHEAD REID (Canterbury) read a suggestive paper on School Food, advocating greater variety and directing attention to the value of chestnuts, banana and wholemeal flours, tripe, vegetable soups, and the like.

LADIES' SECTION.

This section met at the Woodward Institute under the chairmanship of the Countess of RADNOR (the President). Some of the subjects discussed in this section were the appointment of ladies as sanitary inspectors at the same rate of payment as the male officers; a paper on Domestic Hygiene by Dr. CLARA FITTER; Invalid Children's Aid, by Miss MUNNS; and Children's Emigration, by Mrs. CLOSE.

Lady HAMILTON proposed the following motion:—

> That the council of the Royal Institute of Public Health be earnestly requested to take into consideration the desirability of steps being at once taken, either through the agency of the municipal corporations or by some other means, of bringing home to the poor a knowledge of the principles of health.

This was seconded and carried.

Councillor HUNT (Acton) read a paper on

Municipal Crèches

and moved—

> That this meeting is of opinion that municipal authorities should be empowered to erect and maintain day nurseries for the care of the infants and young children of women employed in day labour, and that for such purpose the Government be petitioned to introduce an adoptive Bill in the next session; that copies of this resolution and Mr. Hunt's papers be sent to the Prime Minister and also to each municipal and local authority with a request to their respective Parliamentary representative to support the Bill.

Councillor BROADBENT (Huddersfield) seconded the motion which was carried.

Excursions.

Saturday was devoted to excursions. Some members of the congress went to Dover, others to Canterbury, but the majority crossed over to Boulogne-sur-Mer. The turbine steamer *The Queen* had been secured for that purpose but as the channel was perfectly smooth there was no opportunity of testing the sea qualities of this magnificent ship. The splendid weather, however, contributed largely to the enjoyment of the trip. The Mayor of Boulogne was awaiting the arrival of the ship on the quay together with a band to play the national anthems of both countries and a large crowd received the visitors with cheers. Lunch and toasts at the Casino further cemented the bonds of amity between the two countries and the two towns which face each other across the Channel. The municipality of Boulogne offered tea to the visitors at the Hôtel du Nord prior to their departure and altogether a most enjoyable day was experienced by the 360 excursionists who availed themselves of this opportunity.

SECTION OF PREVENTIVE MEDICINE.

The Debate on Sanatoriums for Pulmonary Tuberculosis and the Sandgate Scandal.

On Monday Dr. NATHAN RAW (Liverpool) read a paper introducing the question of Sanatoriums for Consumptives. He insisted on the necessity of organised effort being made by public bodies, such as municipalities, county councils, boards of guardians, and others, so that such institutions might be created. They had an excellent educational effect but the treatment "must be carried out under the direct supervision of a medical man specially trained for this special work." He then insisted on the selection of a suitable site on a high altitude and well away from smoke and other impurities. The incapacity to work caused by phthisis cost London over £4,000,000 per annum and he had calculated that the working classes of Liverpool lost annually in wages through being invalided by this disease at least £300,000. But in Germany much of this loss had been saved owing to the fact that from 68 to 74 per cent. out of 27,176 patients treated in sanatoriums had been able to return to work. He thought that the health authorities had ample power under the Public Health Act to deal with consumption and the county councils could also proceed in the matter under the Isolation Hospitals Acts. In conclusion, he denounced the present practice of calling anything a sanatorium. This led to disappointment, because the results in unsuitable places were not encouraging and the public had been led to expect too much from sanatoriums. Nevertheless, they constituted the best treatment medical science could offer to-day, though they could only be successful in selected cases.

Mr. ADOLPHE SMITH was invited to speak next. He said that they had close to them, at Sandgate, so-called sanatoriums for the treatment of tuberculous disease which in no wise answered to the description given by the opening paper. Dr. Raw claimed that such sanatoriums should be managed by medical specialists but at Sandgate no medical man was responsible. The British law sought to prevent the people from resorting to quacks. British boards of guardians, in carrying out the Poor-law, sent patients to the homes at Sandgate which were managed by absolutely unqualified persons. The Jones's homes at Sandgate professed to give outdoor treatment but it was out-in-the-street treatment, where the pure air consisted of the maximum supply of motor-car dust. In Germany extensive experience showed that sanatoriums cost £200 per bed and more than

4s per day per patient, altogether and all told from £90 to £100 a year At Sandgate only a guinea a week was paid and out of this a profit was made The speaker strongly denounced the running of such enterprises for profit and the trading on the miseries of the poor

Mr L J D **BROCKMAN** speaking as a lawyer living at Sandgate, explained that nothing could be done till medical science had spoken It was necessary that tuberculosis should be defined as a dangerous and notifiable disease They could not deal with the internal arrangements of a house unless the nuisance therein created became an external nuisance But if tuberculosis could be qualified and recognised as infectious they would have a right of entry, of removal of patient of disinfection and of isolation But even then it would be necessary to define what was a hospital, for the Act did not apply to hospitals

Dr C E **PERRY** medical officer of health of Sandgate now rose first to express his thanks to THE LANCET for all that journal had done to help them to get rid of a serious grievance The utility of sanatoriums depended on their management and he knew personally several cases where great benefit had resulted But this was due to the situation of the sanatoriums and the excellence of their management At Sandgate the Jones s homes were in the main street, they had no gardens and the patients mingled with the general population On the Riviera the general population had suffered from the presence of such phthisical patients who went to winter in the south Now the hotels refused to receive people suffering from tuberculosis and they were sent to a splendid [illegible] on the hills behind Mentone [illegible] wrong to run homes for priv[illegible] should be constructed by the public authorities and paid for out of the poor rates

Mr S **BACON** town councillor, from Poplar agreed that the homes at Sandgate where some of the poor from Poplar had been sent were unsuitable for the purpose but the London guardians did not know where to find suitable homes Some time ago the guardians held a meeting at St Martin s Hall to discuss what measures could be taken for the metropolis in this matter They received expressions of sympathy from all sides but nothing was done, so they remained with no choice but Sandgate or the workhouse The difficulty was to treat London bread winners in the early state of the disease They naturally would not leave off work to go to a workhouse and be pauperised but there would be less objection to go to a hospital or a sanatorium where there would be no degrading conditions

Dr **MILLARD** said that at Leicester they used a ward of their fever hospital, which had 20 beds for the treatment of tuberculosis

Dr **BARLOW** questioned the usefulness of sanatoriums for tuberculosis and Canon **HORSLEY** said that at Southwark they had left off sending their cases to Sandgate and this now for several years Nothing effective would be done unless there were compulsory powers and the poor would only believe that the disease was dangerous when they saw disinfection enforced But even if a man was sent to a sanatorium he would soon fall ill again when he went back to his wretched home General hygiene would do more than special sanatoriums

Dr W F **DEARDEN** (Manchester) said that to send patients to Sandgate was no better than to leap from the frying pan into the fire People would go to a good hospital but not to a workhouse infirmary At Manchester they were subsidising by retaining and paying for a certain number of beds a large hospital that was in course of construction outside the town This would constitute a sort of municipal sanatorium

Councillor B **HOBBIS** Mayor of Maidenhead alluded to the action of the great friendly societies They had sent a deputation to Germany which reported favourably in regard to the sanatoriums for the treatment of phthisis Nevertheless the friendly societies had not moved in the matter If the truth must be told it was not in their interest that sick members should live long Those members who returned from sanatoriums patched up but disposed to fall ill again cost too dear The friendly societies contented themselves with dealing with this matter as they had dealt with the question of old age pensions—they handed over the problem to the State

Dr J C **MCWALTER** (Dublin) said that the question had been much discussed in Ireland and the feeling was that sanatoriums for tuberculosis were considered to be too expensive as their results were of doubtful benefit They produced apparent cures but the patient soon relapsed when he returned to slum life Where better results were shown it was because patients had been taken at such an early stage that in ordinary circumstances they would hardly have been considered as invalids

Dr G **HOLLIES** insisted that if the patient had a suitable home as much could be done for him in his own dwelling as in a sanatorium

Dr J **WRIGHT MASON** (Hull) inquired who was to supply the sanatoriums He thought that this should be done by the municipalities but he was opposed to palatial buildings and great expenditure If outdoor treatment was required then nothing was better than tents and they did not cost much

Dr **RAW** in his reply regretted that the question of the homes at Sandgate had been introduced He knew nothing about them and could not therefore deal with that phase of the subject What he wanted to bring forward was the fact that pulmonary tuberculosis was infectious and was curable and that sanatoriums constituted the best means of effecting such cures As for the question of expense under the Poor law and solely for the treatment of phthisis £1 000 000 were now being spent annually Surely it would be better to devote this money to sanatoriums even if they only restored the patients to their work for two or three years

Dr **PERRY** rose at the conclusion of the reply to suggest that some motion summarising the opinions expressed should be submitted before passing on to another subject

Mr **ADOLPHE SMITH** thereupon moved the following —

> [illegible] e aggregation and treatment of [illegible] heir own groups in an isolated [illegible] ilation and be placed under the [illegible] cal practitioners

Dr **PERRY** seconded this motion

Mr **BACON** objected He did not see the need of such a motion, it tied people s hands and therefore he moved the previous question

No one however could be found to second the previous question so the motion was put and carried by a large majority This brought the debate to its logical conclusion

THE MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND

THE annual meeting of this association was held in London on July 21st and 22nd The presidential address was delivered by Dr R **PERCY SMITH** who chose for his subject Paranoia its position as a clinical entity and its relationship to other mental disorders Paranoia as a term to describe a certain primary cause of insanity was first used by Kahlbaum in 1874 and since then by Mendel (1881) Spitzka (1887), and others The death in 1886 of *King Ludwig II* of *Bavaria*, who was a life long victim of this form of mental disorder, served to draw increased attention to the study of paranoia. The medical certificate of death signed by four specialists in mental disease referred to the king as having suffered from that form of mental disease which is well known to alienists and physicians of experience as paranoia The term ' paranoia had however, though largely and widely employed by alienists in Europe and America received scant attention in Great Britain no mention being made of it in the writings of *alienists of the older school* *Thus, it was* not mentioned in the text books of Savage (1884) or Bevan Lewis (1889) Clouston (1892) referred to it in a brief paragraph in the third edition of his work and the late Dr Hack Tuke gave an account of paranoia in the *Dictionary of Psychological Medicine* (1892) At first some confusion prevailed in the use of the term, since some authors did not discriminate between this grave constitutional, progressive chronic disease of the mind and other acute mental disturbances which only superficially resembled it but had nothing in common with it as regards fundamental characters and mode of evolution of symptoms Thus in addition to the original paranoia (the *primare Verrucktheit* of German authors and the *délire chronique à évolution systématique* of French writers) which was a chronic and incurable disease running a definite course of several years' duration a motley group of acute affections classed together under the term "acute paranoia" was included under paranoia by various writers, with the result that instead of clearness and discrimination much confusion had resulted. In the last decade, however, mainly owing to the work and writings of Krafft-Ebing, Magnan, Kraepelin, and others, and the growth of a broader and essentially different standpoint adopted in the investigation and classification of the insanities from the evolutionary and prognostic aspects, the conception of paranoia had grown clearer and its position in the scheme of the insanities was better defined. Cramer, who a few years ago summarised the history of the subject, pointed out the essential unity of the modern view of paranoia as developed by Magnan and Kraepelin. He referred but little to English writers and evidently was inclined to regard their views as obsolete. He said that Italian investigators had either followed the French or the German school, which remark might be applied to the younger rising school of psychiatry in the United States. Dr. Smith then dealt with the question, long debated by alienists, as to whether paranoia in the proper sense (i.e., excluding the so-called acute paranoia, a term which was fast dying out) was primarily a disorder of the affective side of mind (the sphere of feeling and emotion) or of the intellectual process and after a lengthy survey of the facts and arguments available came to the conclusion that the former view of its pathogenesis must be considered the correct one. Krafft-Ebing in the latest (1903) edition of his "Lehrbuch" classified paranoia under the subdivision Psychical Degenerations (which included katatonia, *folie raisonnante*, paranoia, and periodic insanity), as distinguished from the psycho-neuroses (which included melancholia, mania, primary (curable) dementia, hallucinatory delirium, and the secondary delusional and terminal dementias). Kraepelin had recently described a paranoid form of dementia præcox, a somewhat rare variety of the insanity of adolescents, presenting a superficial resemblance to paranoia but nevertheless essentially distinct therefrom. Dr. Smith concluded by stating his own view that paranoia was a chronic insanity marked by a stage of systematised delusions, whether of persecution or of exaltation variously combined, that it originated in youth, adolescence, or early adult life, and was more or less associated with a basis of heredity (neuropathic or psychopathic), that the disturbance of the mind was *abinitio* probably in the affective sphere, and that it was etiologically and clinically different and distinct from acute states of delirium and mental confusion or collapse-delirium, and from secondary states of fixed delusions occurring after attacks of acute insanities.

Dr. G. E. SHUTTLEWORTH read a paper on the Educational Treatment of Young Epileptics. He referred to the passing of the Act of 1898 for the education of epileptic children which enabled the local authorities to provide farm colonies and schools for the care, training, and treatment of young epileptic children. In institutions such children could be brought up in a life of relative usefulness and by the provision of workshops and the teaching of handicrafts to the inmates (such as knitting, needlework, fretwork, basket-making, and farming) the institution could be rendered in a measure self-supporting. He adduced the epileptic colony at Chalfont St. Peter, Bucks, as a typical example. Other institutions were also in course of erection or had been recently completed and opened for the reception of patients at Much Hadham (Herts) and in Cheshire. He was of opinion that accommodation for about 3000 inmates was required for this class of cases in England, while the existing institutions did not provide for more than about 400. The education given in the schools and classes attached to these institutions included physical drill and games involving moderate muscular exercise. Idleness was as bad for the epileptic as for the healthy child. Epilepsy *per se* did not, and in his opinion should not, disqualify a child from the benefits of elementary education. He was strongly of opinion that a physician should be called in to examine and to certify a child suffering from epilepsy as to whether the child was a suitable subject for school or farm colony education and training. Class teaching was better for epileptic children than solitary instruction and corporal punishment should never be administered. Games in the open air were of great benefit to epileptics. Dieting and a proper regulation of the bowels were important matters and the judicious use of some doses of alkaline bromides was often attended with benefit.—In the discussion following the above communication Dr. G. H. SAVAGE stated that medical supervision and dietetic and medicinal treatment in the form referred to above should be the chief agencies for the treatment of epileptic children. Education and training, whether scholastic or manual, should not be prolonged over two and a half or three hours per diem.—Dr. HENRY RAYNER deprecated the regular use of bromides and referred to the greater importance of diet and the regulation of the bowels in the treatment of patients. A few cases of epilepsy tended to improve before puberty or the period of the second dentition.—Dr. J. MILSON RHODES spoke of the insufficient provision for epileptics in this country as compared with the United States and the continent. Schools for epileptics should have plenty of land and playground for the inmates.—Dr. ROBERT JONES spoke in favour of the use of bromides in epilepsy.—Dr. W. LLOYD ANDRIEZEN would not recommend the use of bromide of potassium since potassium was a cardiac depressant. He always used the salts of sodium and ammonium and had found a combination of ammonium bromide (from 10 to 15 grains) and antipyrin (five grains) more effective in removing stupor and dulness and irritable temper of the patients than potassium bromide.

Dr. C. H. BOND read a paper on the Study of the Body-weight in Relation to Mental Disease. He had systematically adopted a plan of weekly weighing of patients suffering from certain forms of insanity at the Horton Asylum and found the curve of weights plotted on the charts a valuable indication having a prognostic value.

The meeting then closed for the day.

At the resumption of the meeting on the following day (July 22nd) Dr. A. W. CAMPBELL gave a lantern demonstration with description of the appearances of various parts of the Cerebral Cortex of Man and Mammals, the histological differences of structure being associated with the localisation of function in the various cerebral areas. The discovery of Flechsig with regard to the presence of "association centres" in the brain was upheld and its important bearing on our future knowledge of neurology and psychology was pointed out.

Dr. JOHN TURNER, assistant medical officer of the Essex County Asylum, read a paper on the Anatomy of the Nervous System, with special reference to the doctrine of continuity of the neurons. Lantern slides were shown illustrating the pericellular networks of fibrils surrounding the large pyramidal cells of the cortex, which were mainly composed of the branching terminals of a class of small nerve cells designated "dark-staining" or "intercalary" cells. This, said Dr. Turner, was an anatomical fact but he could not as yet point out its physiological or psychological significance.

Dr. W. H. B. STODDART read a paper, illustrated with numerous excellent diagrams and stereoscopic slides, on the Psychology of Hallucinations in which an attempt was made to explain the mechanism underlying illusions, hallucinations, and delusions, and to estimate the extent to which the ideational element (as distinguished from the merely peripheral stimulus) entered into the composition of these respective states.

Dr. G. M. ROBERTSON, medical superintendent of Larbert Asylum, Scotland, read a paper dealing with the Treatment of Lunatics in Modern Asylums in contrast with the conditions which prevailed 60 years ago.

Dr. J. CARSWELL read a paper dealing with the Provision for the Care and Treatment of the Occurring Pauper Lunacy of Glasgow and expressed his belief that lunacy was not on the increase in Glasgow.

Dr. RHODES read a paper on the Question of how to provide Accommodation for Chronic and Incurable Cases of Mental Disorder, referring to the provision made on the continent as compared with that in England.

The proceedings then terminated.

THE SOCIAL AND ECONOMIC POSITION OF MEDICAL PRACTICE ON THE CONTINENT.

(Continued from p. 244.)

IN our first article under this heading we dealt with the information supplied from Austria and Germany and we now pass on to consider the situation existing in France. It will be remembered that we sent a series of six queries to trustworthy quarters in the various countries, these queries being designed to elicit opinions relative (1) to the satisfaction or otherwise of the profession with their social status and pecuniary returns, (2) to the existence of a distinction between general practitioners and specialists or consultants; (3) to overcrowding, (4) to contract work, (5) to the legality or otherwise of unqualified practice, and (6) to hospital abuse

FRANCE

1 There is among medical men generally an evident feeling that their position is not what it ought to be and that something is wrong somewhere This is due not to any want of consideration for the medical profession on the part of contemporary society but to the inadequate remuneration obtainable from medical practice The profession enjoys a real influence in French society, medical men have occupied almost every position connected with the government of the country and have been recipients *of honours of all kinds* The jokes of which they are often the object in stage plays and novels are no more than proofs that this influence is in certain quarters regarded enviously From the point of view of material prosperity *things are, however, quite otherwise,* because the general idea to-day is that a medical man is an individual either having private means for pursuing his studies or else making much money, which is unfortunately only true of a dozen Parisian consulting physicians to whom the public constantly point when the *others complain of their lot Under the influence of this* idea the medical profession has been loaded down by the heaviest taxes, one twelfth of the price of rent, doubled in Paris by municipal taxes These taxes fall more heavily on the medical man because his rent is necessarily high in order that he may have a house in accordance with the requirements of his patients rather than with his personal needs, a circumstance which hardly exists in other professions From the social point of view the medical man is burdened with heavier obligations than a member of any other pro*fession The increasing tendency of the democratic ideal is* to give free medical attendance to a larger and larger number in the social category, workmen, employés, and so on; every large organisation causes a crowd of individuals to be cared for at its expense by a single medical man whom it pays at the lowest possible rate, an indifferent post which is always accepted by a beginner and which goes on from beginner to beginner, unless the bait of a decoration at the end of 20 years of this voluntary servitude induces some practitioner to hold the appointment permanently In fact the number of people who pay their medical attendant is gradually decreasing from all these causes while the number of practitioners is increasing Even among patients belonging to the middle and upper middle classes every medical man attends his relatives and his intimate friends gratis *which is a loss not for him but for* the others It is thus easy to calculate that in Paris of 2,714,000 inhabitants one half avoid paying any medical fees at all, 1,000,000 only pay a nominal price, and there remain hardly 200,000 families constituting the real practice of the 3342 existing physicians, each of whom has to attend at least 20 *well-to-do persons* gratuitously *on account of being* relatives or friends, so that " ' [illegible] reduced by about 60,000 The [illegible] of travellers makes, fortunately, [illegible] foreign medical men desirous of competing with the French practitioners in this branch of practice spare no pains in *order that they may be able to take part in it. The general* idea according to which the medical man makes a large income is so widely spread that when there is a question of fees between a practitioner and his patient the courts decide against the medical man who scarcely dares to claim his due where it is refused him

2 There is not a very sharp line drawn between general or family practitioners and hospital physicians The latter, in fact, are ready to become family attendants to wealthy households because their number has grown so great on account of the increase of hospitals that they cannot live as comfortably as they wish while confining themselves to the position of consultants There are even young hospital surgeons who do not hesitate to engage in general practice In reality everyone does what he can to extend his practice and there is only a small number of specialists who are real slaves to their specialty and who refuse to undertake whatever comes to them One barrier exists between the two classes of practitioners, it is a sort of fellow feeling, such that a hospital physician having a patient to send to another practitioner never sends him to any but another hospital physician

3 There is evidently a *superabundance of medical men* The actual proportion is 18,871 medical men for 39,000,000 inhabitants, or one medical man for 2066 inhabitants This enormous number is due to two causes, first, the exemption from two years of military service out of three which benefits medical students, and, secondly, a considerable influx of foreign students, especially Russians and Roumanians Since a year ago there has been an abatement in this, because *foreign students are no longer permitted to* dispense with part of the examination imposed on French students To be more exact, this favour is only granted now to those who wish for the French diploma without meaning to practise in France For those who wish to practise in France the same preliminary examinations are required as for the French students When this regulation came into force the numbers of these foreign candidates immediately decreased

4 Special contracts are made by certain societies or associations with medical men to the effect that all their members shall be attended by the year for a fixed sum The details of the arrangement vary the medical man may either receive a certain *sum for attending* a *number of* individuals whatever visits he may make during the year, or he may receive a fixed sum with the addition of one or two francs for each member, or he may receive a small sum besides for each visit These organisations, of which the friendly societies (*sociétés de secours mutuels*) represent the most formidable type, are one of the principal causes of the weakening of the medical profession, particularly in the provinces When there is only one medical man in a district it is not unusual to find the people forming in this way a veritable combination against him Half of the population is enrolled in a friendly society from which the unfortunate man only draws a reduced tariff, while to the other half which is classed as indigent he gives free medical attendance in exchange for an honorary title In agreements of this kind the medical man's *time is his own, except that which is required for the work* of the society, it is very rare for a practitioner to hold such an appointment on condition that he does not accept other patients

5 There are laws against quackery but they are hardly ever enforced, almost all quacks when they are prosecuted find defenders who set in motion political influences thanks to which the judges abstain from convicting them or only condemn them to ridiculous penalties which are by no means deterrent According to the law, no man may be called doctor unless he is in possession of the diploma of doctor of medicine *However, difficulties have arisen since the recent* creation of the diploma of doctor of pharmacy, the holders of which diploma naturally seek to avail themselves of the confusion In the lower category, that of the so-called health officers, suppressed ten years ago as regards new entries, but of which there still exist more than 1200 representatives, the usurpation of the title of doctor is frequent A singular legal decision has even put them in the right by stating that since they had the right to practise medicine they did not act illegally by taking this title and could only be punished by a trifling fine for causing themselves to be mistaken for the other doctors

6 One sees, unfortunately, only too many people making use of the hospitals who might pay their medical attendants the usual fees Public opinion tends to confound salaried people of every sort with the really poor and to claim for them the same privileges Charity is thus diverted from its true end and becoming a means of economy is nothing but a swindle The abuses have become such that a certificate of poverty or the production of a rate or tax paper proving *that the individual does not pay more than a certain sum* in rates or taxes is now required both for out-patients and in patients But many abuses still exist, particularly in surgical cases, and it is, sad to say, often the medical men themselves who cause them by giving letters of introduction to the surgeon to patients whom they wish to oblige by helping their economies at the expense of their *confrères*

Finally, there are *enormous abuses in the sending to the* hospitals of workmen injured by accidents during work. These workmen by receiving benefits from the rich assurance companies ought not to be regarded as poor persons having a claim to free medical attendance.

Obituary.

SIR JOHN SIMON, K.C.B., F.R.S., D.C.L. OXON., LL.D. CANTAB. & EDIN., M.D. (HON.) DUB., M.D. ET CHIR. (HON.) MUNICH,

FELLOW AND PAST PRESIDENT OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND; FELLOW AND PAST VICE-PRESIDENT OF THE ROYAL SOCIETY; PAST PRESIDENT OF THE PATHOLOGICAL SOCIETY OF LONDON; FORMERLY MEDICAL OFFICER OF HER MAJESTY'S PRIVY COUNCIL AND CROWN MEMBER OF THE GENERAL MEDICAL COUNCIL; BUCHANAN MEDALLIST OF THE ROYAL SOCIETY.

John Simon, who did more than any other worker of the Victorian era to prevent disease and to prolong life, afforded in his own person an excellent example of the principles which he so strenuously and so fearlessly inculcated. Born in the second decade of the last century, after a career of altogether exceptional brilliancy and usefulness he has passed away in 1904 at the advanced age of 88 years. He had outlived all his fellow workers and there is practically no one left to tell at first hand the story of his life. Even to many of our oldest medical officers of health the name of Sir John Simon is little more than an honoured expression, while in the case of the younger generation of officials and of students of hygiene it is associated in somewhat nebulous fashion with the earliest battles which were waged by sanitary science and administration against preventable mortality and suffering.

Fortunately for history, and as if, indeed, John Simon foresaw that none of his immediate contemporaries would be left to tell in detail of his battles, he has left behind him what will for all time be regarded as a classic contribution to the progress of preventive medicine in this country. Simon's "English Sanitary Institutions" contains not only the story of his own work but also a record of the labours of all those who since the beginning of real sanitary progress in this country have taken a leading part in the fight. As a literary production this volume is of the highest order and the true beauty of its language and the broad humanity of its teaching can be best appreciated by those whose ideals lead them in the direction in which Simon's thoughts and aspirations tended. Simon has died what he himself would have termed a natural death. As, indeed, he tells us in the annual report of the General Board of Health for 1858:—

> *Death by old age* is, physiologically speaking, the only normal death of man. .. . Death virtually by old age comes to some men even before their sixtieth year. To most men it comes much later. A few complete their fifth vicenniad and even carry far into it their noblest mental endowments. ..... And it cannot be far from the truth to assume that, even if there were no artificial interference with the duration of life, death by natural decay would in this country under its present circumstances usually happen at about 80 years of age. Now little more than a tenth par [illegible] happen at 75 years and upwards and *thus,* [illegible] one *may say that at least* nine-tenths of th[illegible] more or less prematurely.

Simon, who was the last of the 14 children of the late Louis Michael Simon, of Blackheath and the Stock Exchange, was of Anglo-French descent. His early education was obtained at a preparatory school at Pentonville and afterwards at Greenwich. Subsequently he was sent into the family of a German pastor at Hohensolms and after a sojourn there of less than a year he was in 1833 apprenticed to Mr. Joseph Henry Green, the first professor of surgery at King's College and surgeon to St. Thomas's Hospital. In 1838 he took the Membership of the Royal College of Surgeons of England, and two years later was appointed assistant surgeon to King's College Hospital. Five years later, and at an exceptionally early age, the blue riband of science was conferred upon him, for he was elected a Fellow of the Royal Society as a result of a paper on the Comparative Anatomy of the Thyroid Gland; and two years later, in 1847, he was appointed lecturer on surgery at St. Thomas's Hospital. Before this date he had contributed articles and papers on scientific, social, and philosophic subjects which bore evidence that he possessed a genius which tended especially in the direction of a remarkable power of concentration and generalisation in connexion with social and scientific subjects.

Before dealing with the work with which Simon's name will always be associated it is necessary that some idea should be conveyed of the sanitary condition of the people at the period when this work commenced. Edwin Chadwick's labours had really begun about ten years before Simon joined the ranks of the medical profession and in 1832 Chadwick had been appointed one of the assistant commissioners to inquire into the working of the Poor-laws. In this capacity his signal abilities were soon manifest and shortly afterwards he became secretary of the newly created Poor-law Commission. It was the work of this commission and of Dr. Neil Arnott, Dr. Southwood Smith, and Dr. J. P. Kay, the medical inspectors connected with it, which first drew the attention of the public and of Parliament to the eminently unwholesome conditions under which the poor of this country lived and laboured, and a synopsis which Chadwick compiled from the elaborate reports of the medical inspectors and which he termed a "General Report on the Sanitary Condition of the Labouring People of Great Britain" led in its turn to the appointment of a Royal Commission to inquire into the allegations there set forth. The Commission issued its final report in 1845 and the recommendations which accompanied that report were, as is now well known, the work of Chadwick himself; indeed, the Commission, in place of treating Chadwick as a reporter whose facts and inferences were the subject of an inquiry, soon appreciated his work and worth and welcomed him as a collaborator and adviser. The report of this Commission was responsible for the passing of the Public Health Act, 1848, and the creation of the General Board of Health, and shortly afterwards there was additional legislation to provide for the care of the metropolis which was exempted from the operations of the Public Health Act of 1848. But the General Board of Health did not yet number among its members a medical man, and it was not until two years afterwards, under the dread of approaching cholera and under the cloak of the Interments Act, that power was given to add a medical man to the *personnel* of the Board, when Dr. Southwood Smith was elected to the office. This ludicrous association of a medical man with the Interments Acts called forth from Dr. Rumsey the following caustic criticism:—

> Who would have thought that in the last decade of advancing civilisation and in a nation boasting of its intellectual and material resources, of its administrative energy and efficiency, the whimsical experiment should have been actually tried of appointing three non-medical authorities—two lords and a barrister—to preserve the health of the living, and then, after a year or so of doubtful success, calling in a physician to bury the dead?

But despite this lay antagonism to the medical profession—an antagonism which is still occasionally to be found in official circles—the public conscience was awakening. Voluntary bodies having for their object the amelioration of the unwholesome condition of the poor were being formed, and in 1850 there was founded the Epidemiological Society of London to study the causes which led to premature death and preventable disease and to advise administrative bodies thereupon. Among the founders of this society were practically all the leading scientific spirits of the day and the last survivor of that little band has just passed away in the person of Sir John Simon. The development of the idea of prevention which was taking place at this time was admirably represented by Lord Palmerston when, in response to an appeal to appoint a great religious fast in consequence of the advent of Asiatic cholera, he wrote: "It did not appear to Lord Palmerston that a national fast would be suitable to the circumstances of the present moment. The Maker of the universe established certain laws of nature for the planet in which we live; and the weal or woe of mankind depends upon the observance or neglect of those laws." But this powerful advocacy notwithstanding, all did not go well with the General Board of Health. The Board was in effect Chadwick and he, with all his intense earnestness, had not the scientific knowledge or the tact to appreciate the case of his opponents. A powerful reaction against what was regarded as his too masterful policy was the result and such reaction soon ended in disaster. According to the provisions of the Act of 1848 the Board was to continue to operate for five years, but in 1854, after a long debate during which much vituperation was levelled against Chadwick, the Government was defeated on a proposal to renew the Act. Subsequently, however, a modified Act was passed which was subject to annual renewal and which constituted a new Board of Health, consisting in point of fact of a president who was provided with certain expert advisers. Sir John Simon in his "Institutions" discusses with eminent fairness and sympathy the circumstances which in effect brought the

SIR JOHN SIMON, K.C.B., F.R.S.

first Board of Health to its end, summing up in these words:—

> [illegible] ing is a not ignoble excuse for such signs of over-eagerness as he may have shown.

By this unfortunate termination of the first General Board of Health the services of both Mr. Chadwick and Dr. Southwood Smith, the first medical member of the Board, came to an end. At this juncture Simon became the principal actor on the scene. Simon owed his first appointment in the sphere of prevention to the fact that even at that remote period local authorities were able by means of Acts of Parliament to provide themselves with special powers, and in accordance with the recommendation of the Health of Towns Commission, a few cities were beginning to appoint medical officers of health. To the town council of the city of Liverpool belongs the honour of having in 1847 appointed the first official of this class, and in 1848 the Corporation of London was fortunate enough to secure Simon's services in a like capacity.

Although his City appointment had attached to it a few loosely defined statutory duties the conception of a medical officer of health was entirely new and the office was practically what its first holder chose to make it. Simon went to work on lines which are now familiar enough but which in those days were entirely novel. Almost the first step was to obtain information as to mortality. By a [illegible] the 11 Poor-law medical officers of the City. With the aid of these returns a routine of weekly inspections was instituted, at first restricted to particular premises where certain sorts of disease or death had occurred but afterwards developed to a methodical sanitary superintendence of all the poorer parts of the City, at that time including some 7000 inhabited houses. The overcrowding which then existed among the poor population of the City and elsewhere in London was habitually of the grossest description. Many courts, alleys, and individual dwellings teeming with inhabitants were totally unfit for habitation; light and ventilation were still hindered by the window-tax; there existed no provision whatever against the spread of infectious diseases, typhus fever was common, and the death-rate, judged by modern town standards, was appallingly high. Water was delivered unfiltered. Much of it was either fetched from standpipes or stored within the dwelling in cisterns and receptacles of the most objectionable kind. The sewage of London was discharged directly into the Thames. There were some 130 slaughter-houses within the City boundaries, nearly half of which were underground vaults and cellars. Burials still took place in City graveyards and, among the poor, bodies of persons who had died from infectious disease were habitually kept in the room a week or more before burial. The adulterations of food, which about that time were being exposed by THE LANCET Analytical Commission, were common there as elsewhere in London and were altogether uncontrolled, while no sort of check was exercised over unwholesome or dangerous conditions of labour which abounded. The medical knowledge of the time could throw very little light upon the manner in which many of these objectionable conditions operated to produce unhealthiness and death, but Simon had no lack of evidence of the fact that they did so. During his tenure of office much was done by the City authorities on his advice in the direction of improvements in sewerage and [illegible] ent of periodical house [illegible] tice of scavenging, and by [illegible] ances." In particular the [illegible], and Simon congratulated the Corporation that in 1855, at a time "when cess-pools were still almost universal in the metropolis, and while in the mansions of the West-end they were regarded as equally sacred with the wine cellars, they had been abolished, for rich and poor, throughout all the square mile of the City."

The effect of Simon's work as medical officer of health was far more than local. His annual reports, which cover the years 1848 to 1855, form a landmark in the history of English sanitation. They gave the result of systematic surveys of the general sanitary circumstances of the City and of the risks arising from cholera and other diseases, they ventilated questions of housing and other social conditions of the labouring classes, and they poured a flood of light upon a great variety of other matters affecting health. They showed the causes of the evils described and the ways in which they could be remedied. The subjects thus dealt with were then unfamiliar. For many it was a new way of looking at social questions. The sufferings and the degradation which were incurred through the conditions of life of a large section of the labouring classes were not realised and it needed writings like Simon's to show how vain it must be to expect good social fruit from human life which has to run its course under such conditions. These reports, written in the masterly terse English for which Simon was always famous, took hold of the public imagination and were in demand in many quarters. They were subsequently republished with a valuable preface, written in anticipation of a future reorganisation of the General Board of Health, entitled "A Ministry of Public Health." In this essay Simon foreshadowed the ideal to which later he was to give his best energies in striving to attain, viz., a department of Government, with a constituted Parliamentary head, having the duty, "in the widest sense, of caring for the physical necessities of human life." Many of the passages in this essay are striking and we are tempted to quote the following as illustrating Simon's wide conception of the relation of Government to medical affairs:—

> The legislature recognises no medical authority. Occasionally this fact stands out in painful conspicuousness and brings most injurious [illegible] —before Par- [illegible] legal proceed- [illegible]

In 1853 Simon was appointed one of the commissioners to inquire into the tremendous outbreak of cholera at Newcastle and Gateshead. In 1854 the General Board of Health obtained power to appoint a medical officer and Simon was offered and accepted the appointment, which four years later, on the dissolution of the General Board of Health in circumstances to which we have already alluded, became that of medical officer to the Privy Council. During these four years little could be done towards inaugurating a public health policy for the country. The Board of Health, established in 1848 at Chadwick's instance and working on Chadwick's lines and without medical advice, had been too precipitate. When Simon was appointed the work of that Board had lately been fiercely criticised in Parliament and supported only half-heartedly by the Government. The post of medical officer for a time was merely renewed from year to year after Parliamentary discussion; it was made permanent in 1858 when the functions of the Board were transferred to the Privy Council and then only by a narrow majority of six votes after a debate in which Simon's services and work were warmly defended by Mr. Lowe (the late Lord Sherbrooke). During this period of uncertainty Simon had already shown what valuable work could be done by a central medical department. In 1856 he submitted a report reviewing all the inquiries which had been made for the Board of Health into the London cholera outbreaks of 1848-49 and 1853-54, demonstrating conclusively the relation of these epidemics to polluted water-supply and setting out the well-known contrast in cholera incidence afforded in 1854 between the areas supplied by the Southwark and Vauxhall Company and those supplied by the Lambeth Company which originally had been brought out by Dr. Snow's researches. In 1857 he issued the well-known "Papers on the History and Practice of Vaccination," a quarto volume summarising the knowledge and opinions with regard to vaccination at that time, together with a report in which Simon addressed himself to the following questions: (a) What kind of evil was small-pox before vaccination arose to resist it? (b) What facts and arguments led to the first sanction of vaccination and to what sort of inquiry were they subjected? (c) What further knowledge, at the end of half a century's experience, has been gathered as to the protective powers of vaccination? (*d*) What evils have been shown to attend its practice or to counterbalance its alleged advantages? (*e*) How far are there realised in this country those benefits which can reasonably be expected from the general [illegible] ? In 1858 followed the "Report on [illegible] of the People of England," an essay in [illegible] r. Greenhow's work on the prevalence of diseases in different districts of England and Wales, which, for the first time, demonstrated many of the wide variations which exist in the local incidence of certain diseases, and strongly emphasised the need for impartial skilled inquiry and publication of facts in all such cases. All this made the arguments for the establishment of a medical department of the Government overwhelmingly strong and in 1859, after the functions of the General Board of Health had become absorbed by the Privy Council, John Simon was permanently appointed medical officer to the Privy Council.

The jurisdiction of the Privy Council in sanitary matters was limited. The Council had certain statutory duties with regard to public vaccination, epidemic regulations, quarantine and the Medical Acts, as well as a general power of inquiry into "any matters concerning the public health in any place or places." Here, as in his City appointment, the degree of importance and usefulness of medical officership depended on what the medical officer made it. Simon, needless to say, saw his opportunities and used them to the full. He got together a brilliant staff of workers—it is sufficient to mention the names of Seaton, Ballard, Burdon Sanderson, Bristowe, Buchanan, Thorne Thorne, and Power, all of whom at one time or another worked under his direction—and organised a thoroughly efficient inspectorate. The position of public vaccinator was then very unsatisfactory; the system, as administered by the Poor-law Board, without medical advice, had failed to secure efficiency or even method, and a large part of the work of the new department was devoted to obtaining information on which reforms had to be based and which led ultimately to the Vaccination Act of 1867. Vaccination supervision, indeed, throughout formed a large part of the work of the department, partly because Simon was strongly impressed with the necessity of inspection to secure the efficient performance of public vaccination, and partly also because he saw the advantages of utilising and developing in various directions a system which carried his inspectors to all parts of the country. Comprehensive inquiries were also undertaken into the incidence of particular diseases on localities and the circumstances of their spread. These inquiries, together with Simon's summaries of their results, appear in the well-known series of Privy Council reports from 1859 to 1872. They included many classical investigations—for example, those into diphtheria, the diseases of the cotton famine, cerebro-spinal meningitis, and cholera. Systematic investigations were also undertaken into habitually prevalent diseases—epidemic diarrhœa, pulmonary diseases, phthisis, causes of infant mortality, and the like. In 1862-63 an important inquiry was undertaken into establishments where dangerous industries (in connexion with lead, mercury, phosphorus, and arsenic poisoning) were carried on. In 1863 also a survey was made of the hospitals of the United Kingdom, having for its object inquiry into the accommodation afforded by each of them for the treatment of different diseases and into their respective sanitary conditions. In the same year inquiries were made with regard to accidental and criminal poisoning, and in 1864-65 was issued the result of a laborious inquiry into the dwellings of the poorer labouring classes in town and country. Other work undertaken was the adaptation of the then existing system of registrar-general's returns and statistics to sanitary requirements, with the result of initiating the present valuable series of decennial supplements issued by the General Register Office. A few other important matters may be mentioned in this necessarily brief summary of the best period of Simon's enormous labours: the organisation which he established to deal with cholera in the epidemics of 1865-66 and with small-pox during the great epidemic of 1871; the initiation in 1870 of a scheme for laboratory work in connexion with public health matters; and the dealings of the department with questions of quarantine. In his uncompromising opposition to the objectionable and useless practice of quarantine Simon did a great service to this country; he laid down principles of dealing with imported infectious disease which still govern our practice and which now are slowly being accepted by foreign nations. The present system of port sanitary authorities and port inspection had its origin in the organisation which Simon began to promote in 1871.

During the period of Simon's tenure of office under the Privy Council he was largely instrumental in obtaining the enactment of the Sanitary Act of 1866, the Pharmacy Act of 1868, and other legislative measures. With increase of sanitary legislation, actual and prospective, it became evident that the establishment of local sanitary authorities on a wider scale, together with the e [illegible] of central control and direction over [illegible] uthorities, had become necessary to [illegible] e chaos of local government at that time is well known and no one has described its difficulties and drawbacks so well as Simon. The Government in 1868 appointed a Royal Commission to inquire into the operation of various sanitary laws and their administration, including the constitution of the administrative authorities, central and local, and the formation of local sanitary areas. The report of the Commission in 1871 was to the effect that "the administration of the laws relating to public health and the relief of the poor should be presided over by one Minister ...... an arrangement which would probably render necessary the appointment under him of permanent secretaries to represent both departments." Simon viewed this report with some misgiving. The proposal to unite his department with the Poor-law Board might or might not be advantageous for sanitary progress; all would depend upon the Minister who controlled and arranged the early organisation of the new department. But the Commission had excluded from its reference much of the best work which the medical department of the Privy Council had been doing—work which was essentially national and had little or no concern with local government. There were, for example, all the questions relating to industrial diseases and the regulation of unwholesome conditions of employment, and numerous matters concerning the administration of the Medical and Pharmacy Acts. In Simon's view it was essential that these and other large questions of medical policy should be dealt with by a department which would fulfil the proper duties of a Ministry of Health, and it was a serious objection to the proposed Local Government Board that it afforded so little promise of developing into an efficient health department of the Government. The Local Government Act of 1871, creating the Local Government Board, gave him little encouragement. The recommendations of the Commission were further narrowed in the Act. Even then, if a satisfactory policy had been inaugurated when the new department began its labours the initial blunders might have been rectified. But Simon's worst fears were realised. The new Local Government Board, under the direction of its first president, Mr. Stansfeld, lost a great opportunity. It became practically the old Poor-law Board under a new name, continuing all the unsatisfactory traditions of petty interference and over-centralisation which characterised that bureau, while the medical department was placed in a position wholly subordinate to the Poor-law secretariate. Simon had then to witness the mischief done by the Poor-law staff in dealing, without his advice, with the formation of districts for medical officers of health, with the system of grants and repayments to sanitary officers, with appointments of joint districts—a colossal series of blunders from which the public and the whole sanitary service are still suffering. Medical investigations were cut down and restricted in all kinds of ways, and the work which Simon could have effected so ably by means of his staff was handed over to Poor-law inspectors, without knowledge either of public health or of sanitary administration. The position became more and more untenable and to Simon, with his great record of hitherto continuous progress, it became intolerably bitter. The policy to which Mr. Stansfeld had lent himself had become practically fixed in 1874 and when a change of Ministry occurred in that year little improvement was to be looked for. Simon retired disheartened in 1876. Writing in later years in "English Sanitary Institutions" he gives a vivid picture of the opportunities of the time and of the way in which they were lost. "Though many years have intervened I do not refrain from saying how grievously wrong I believe to have been the policy of the system represented. In relation to the flag under which I had had the honour of serving I regard it as having been virtually a policy of retreat."

It is probable that the Local Government Board is now in many ways less open to reproach for neglect of the medical side of its work than in the days when Simon left its service. It is at any rate certain that the medical officer of the Board and his staff now have duties and responsibilities which are far wider and more numerous than they were 28 years ago. But it is notorious that the brilliant scientific and administrative work which has been done by Simon's successors has been achieved in face of a host of inter-departmental difficulties created by the objectionable system against which Simon protested and which it is to be feared still largely prevails. Considering subsequent events in the light of Simon's essays and protests it is impossible not to realise how much higher would be the present position of the whole sanitary service, and how much greater and more general would have been the improvements effected in the whole sanitary condition of the country, if Simon's wider and statesmanlike conception of a Ministry of Health had been adopted. We believe that the formation of such a ministry is not only still desirable but that from many circumstances it is still more imperatively called for than it was in Simon's day. We may quote the following passage from his earlier writings regarding the formation of a Ministry of Public Health:—

> [illegible] there in that beastly [illegible] king such water. [illegible] s thought of the bone- [illegible]; what of the sewer grating before the door; what of the Irish basket-makers upstairs—12 in a room—who came in after the hopper and got fever; what of the artisan's dead body stretched on the widow's one bed beside her living [illegible] cept against wilful [illegible] be law. Fragments [illegible] ugh to establish pro- [illegible] sion of a principle, [illegible]

So far as these lurid conditions do not any longer exist the fact is a testimony to the work of Simon and his coadjutors, but the very circumstance that so much has been done with faulty organisation should encourage the Government to have more confidence in its trained sanitarians and to face boldly the question of a properly organised and subsidised Public Health Department.

Such was the versatility of Sir John Simon, at so many points did he touch the intellectual life of his time, that it would be misleading if we considered him merely from the sides of scientific or of official achievement. Simon was, indeed, much more than a great officer of health and writer on preventive medicine, hygiene, and surgery. He belonged to the highest type of the man of culture and progress in the middle of the last century. When we think of Buckle, of George Henry Lewes, of Claude Bernard, of Charles Kingsley, and of Ernest Renan, we must perforce think also of Simon who was their friend. He was a social force in quarters where science seldom shows her face—among distinguished circles, both literary and artistic, political and social, where the man of science is only too apt to be regarded merely as the enemy of æsthetics or the chiller of enthusiasms. John Ruskin was Simon's intimate friend and Simon appeared as an executor in his first will. Simon was also intimate with the whole pre-Raphaelite circle and it was united in its affection for the little officer of health, so small in stature but great in intellectual dignity, in lofty intelligence, and moral worth.

In his old-fashioned house in Kensington-square gatherings used to take place for many years, from 1867 onwards, of men who had the real right to be considered celebrities. Leaving on one side the brilliant men of science and the pioneers of Simon's own especial work, many most distinguished French, German, and American thinkers and writers, we may mention Thackeray, Kingsley, Tennyson, Rossetti, Burne-Jones, Jowett, Woolner, who all and often assembled in what they felt to be a congenial atmosphere of liberality and learning. And Simon loved to be surrounded by such friends. He was devoted to the grand style in art and in letters and in later years, as he sat patiently on his sofa battling hour by hour with the pains of venerable age, he would brighten up in an extraordinary way at some chance mention of a favourite author, some painter he had once known, some thinker he had once argued with. A partial loss of eyesight had plunged him, as he said, "in a great darkness" and he must have had many long meditative vigils, but he ended his days among troops of truly devoted relatives and friends, the circle of the latter having been ever recruited. Those who enjoyed the privilege of being included in his list will always think with deep affection and reverence of the great sanitarian who dressed and shaved after a bygone fashion, sat in the familiar room, and awaited the end among the ghosts of the great men of a great century, himself a pathetic and noble shadow soon to join them. That end came last Saturday, July 23rd, after a short period of unconsciousness.

A collected series of Simon's reports, edited by Dr. E. C. Seaton and published in 1887 by the Sanitary Institute, should be read by all sanitarians. "English Sanitary Institutions" was first published in 1890, and a later edition, with various additions, in 1897. Soon after his retirement, in 1878, Simon was elected Preside[illegible] geons of England. He had [illegible] Council (1868–1880) and Vi[illegible] of office under the Privy Council he had taken a deep interest in all questions relating to the organisation and status of the medical profession and had been concerned officially in securing the Medical Act of 1858 and in promoting the Medical Acts Amendment Bill which fell through in 1870. Some of his well-known essays on the position of the medical profession were reprinted in the public health reports above referred to. After his retirement Simon accepted a nomination as Crown member of the General Medical Council, on which he continued to serve till 1895. At the time of his death Simon had been longer on the roll of the Royal Society than any other Fellow. He was a Vice-President of that society from 1879 to 1880. He received numerous honorary degrees from universities at home and abroad. The recognition which he received from the Government on his retirement was merely the decoration of C.B.; he was made K.C.B. on the occasion of the Jubilee of 1887.

CHARLES KELLY, M.D., F.R.C.P. LOND.

Dr. Charles Kelly, medical officer of health of a large portion of Western Sussex, died after a very short illness on June 16th at his residence in Gratwicke-road, Worthing. The deceased, who was 59 years of age, appeared to be in his usual health on June 14th and attended a meeting of the sanitary, baths, and burial committee of the town council held at the municipal offices, Worthing. On June 15th, however, he was seized with illness which terminated fatally on the evening of the following day. Dr. Kelly's medical education was received at King's College, London. In 1866 he graduated as M.B. at the University of London, obtaining a university scholarship in medicine and midwifery; in the following year, when he took the degree of M.D., he had the distinction of being gold medallist. In 1866 he was also admitted M.R.C.S. Eng. and in 1880 he was elected a Fellow of the Royal College of Physicians of London. At King's College Hospital he held the appointments of house physician and resident accoucheur; he was also a Fellow of King's College where for some time he was professor of hygiene and curator of the museum. In March, 1874, he was appointed medical officer of health of the combined district of West Sussex, including the urban authorities of Arundel, Horsham, Littlehampton, Portslade, Southwick, and Worthing and the rural district authorities of East Preston, Horsham, Midhurst, Petworth, Steyning (East and West), Thakeham, and Westborne. The area of the district is, of course, very extensive and the population, which at the time of Dr. Kelly's appointment in 1874 was about 96,000, had risen in the census year of 1901 to 122,604. For a few years he resided in Horsham, but eventually he removed to Worthing. Dr. Kelly was a man of many attainments and possessed considerable literary ability. He was the author of a number of reports on the general health conditions of his district as well as on outbreaks of enteric fever in Worthing; one of these, which occurred in 1893, was the subject of a great many references in our columns. He was a Fellow of the Royal Meteorological Society and the Worthing meteorological records were compiled under his supervision. The funeral took place at Broadwater Cemetery on June 20th.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 8565 births and 4142 deaths were registered during the week ending July 23rd. The annual rate of mortality in these towns, which had been 13·5, 13·5, and 13·7 per 1000 in the three preceding weeks, further rose last week to 14·1 per 1000. In London the death-rate was 14·8 per 1000, while it averaged 13·9 per 1000 in the 75 other large towns. The lowest death-rates in these towns were 3·1 in West Bromwich, 5·5 in King's Norton, 7·1 in Willesden and in Leyton, 7·4 in Northampton, 8·3 in Hornsey, and 8·6 in Hastings; while the highest rates were 18·2 in Birkenhead, 18·6 in Bootle, 19·3 in Sunderland, 19·6 in Rhondda, 19·7 in Burnley, 20·0 in St. Helens, and 20·3 in Liverpool. The 4142 deaths in these towns last week included 792 which were referred to the principal infectious diseases, against 456, 500, and 506 in the three preceding weeks; of these 792 deaths, 428 resulted from diarrhœa, 177 from measles, 91 from whooping-cough, 50 from diphtheria, 24 from scarlet fever, 17 from "fever" (principally enteric), and five from small-pox. No death from any of these diseases was registered last week in Hornsey, Hastings, Ipswich, West Bromwich, King's Norton, or West Hartlepool; while the highest death-rates from the principal infectious diseases were recorded in Aston Manor, Stockport, Wallasey, Liverpool, Bootle, Wigan, Huddersfield, Leeds, and Rhondda. The greatest proportional mortality from measles occurred in Birkenhead, Bootle, St. Helens, Huddersfield, Bradford, Leeds, and Rhondda; from scarlet fever in Hanley and Warrington; from whooping-cough in Burton-on-Trent and Blackburn; and from diarrhœa in Tottenham, West Ham, Birmingham, Aston Manor, Stockport, Wallasey, Liverpool, and Rhondda. The mortality from diphtheria and that from "fever" showed no marked excess in any of the large towns. Of the five fatal cases of small-pox registered in these towns last week, two belonged to Newcastle-upon-Tyne and one each to London, Rochdale, and Gateshead. The number of small-pox patients in the Metropolitan Asylums Hospitals at the end of last week was 51, against 74, 71, and 62 at the end of the three preceding weeks; six new cases were admitted during the week, against ten, ten, and seven in the three preceding weeks. The number of scarlet fever cases in these hospitals and in the London Fever Hospital, which had been 1631, 1685, and 1698 on the three preceding Saturdays, had further risen to 1754 on Saturday last, July 23rd; 234 new cases were admitted during the week, against 254, 269, and 229 in the three preceding weeks. The deaths in London referred to pneumonia and diseases of the respiratory system, which had been 146, 135, and 155 in the three preceding weeks, declined again last week to 120, and were 13 below the number in the corresponding period of last year. The causes of 39, or 0·9 per cent., of the deaths registered in the 76 towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in West Ham, Bristol, Salford, Leeds, and in 46 other smaller towns; while the largest proportions of uncertified deaths were registered in Birmingham, Liverpool, Warrington, Manchester, and Sunderland.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been 16·3, 15·8, and 14·8 per 1000 in the three preceding weeks, rose again to 15·7 per 1000 during the week ending July 23rd, and was 1·6 per 1000 in excess of the mean rate during the same period in the 76 large English towns. The rates in the eight Scotch towns ranged from 11·0 in Leith and 12·3 in Perth to 18·7 in Greenock and 21·1 in Paisley. The 518 deaths in these towns included 23 which were referred to diarrhœa, 22 to whooping-cough, 12 to measles, three to scarlet fever, three to diphtheria, three to "fever," and two to small-pox. In all, 68 deaths resulted from these principal infectious diseases last week, against 75, 64, and 53 in the three preceding weeks. These 68 deaths were equal to an annual rate of 2·1 per 1000, which was 0·6 per 1000 below the mean rate last week from the same diseases in the 76 large English towns. The fatal cases of diarrhœa, which had been 18, 20, and 19 in the three preceding weeks, rose again last week to 23, of which ten occurred in Glasgow, four in Edinburgh, four in Dundee, and three in Aberdeen. The deaths from whooping-cough, which had been 31, 24, and 21 in the three preceding weeks, rose again to 22 last week and included 13 in Glasgow, three in Paisley, two in Edinburgh, two in Dundee, and two in Aberdeen. The fatal cases of measles, which had been six in each of the two preceding weeks, increased last week to 12, of which six were registered in Edinburgh, three in Greenock, and two in Glasgow. The deaths from scarlet fever, which had been two in each of the two preceding weeks, increased last week to three, and all occurred in Glasgow. The fatal cases of "fever," which had been three, seven, and three in the three preceding weeks, were again three last week, and were all recorded in Glasgow, where the two deaths from small-pox also were registered. The deaths referred to diseases of the respiratory organs in these towns, which had been 80, 88, and 49 in the three preceding weeks, rose again last week to 75, but were slightly below the number in the corresponding period of last year. The causes of 26, or more than 5 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 16·5, 17·9, and 19·3 per 1000 in the three preceding weeks, declined again to 17·5 per 1000 during the week ending July 23rd. During the past four weeks the death-rate has averaged 17·8 per 1000, the rates during the same period being 13·4 in London and 15·4 in Edinburgh. The 127 deaths of persons belonging to Dublin registered during the week under notice showed a decline of 13 from the number in the preceding week and included 15 which were referred to the principal infectious diseases, against seven, ten, and 18 in the three preceding weeks; of these, five resulted from measles, five from diarrhœa, three from whooping-cough, and two from "fever," but not any from small-pox, from scarlet fever, or from diphtheria. These 15 deaths were equal to an annual rate of 2·1 per 1000, the death-rates last week from the principal infectious diseases being 2·9 in London and 2·0 in Edinburgh. The fatal cases of measles, which had been two, two, and ten in the three preceding weeks, declined again last week to five. The deaths from diarrhœa, which had been one, five, and two in the three preceding weeks, rose again to five last week. The fatal cases of whooping-cough, which had been three in each of the two preceding weeks, were again three last week. The two deaths from "fever" corresponded with the number in the preceding week. The 127 deaths in Dublin last week included 24 among children under one year of age and 30 among persons aged 60 years and upwards; the deaths of infants showed a very considerable decline, while those of elderly persons were but slightly fewer than the number in the preceding week. Five inquest cases and three deaths from violence were registered; and 52, or more than two-fifths, of the deaths occurred in public institutions. The causes of seven, or nearly 6 per cent., of the deaths registered in Dublin last week were not certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Surgeons: W. H. Daw to the *Wildfire*; T. H. Vickers to the *Wildfire* for the *Immortalité*; and H. C. Ross to the *Wye*.

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel F. B. Maclean proceeds to the Royal Herbert Hospital for duty. Lieutenant N. E. Dunkerton proceeds to London shortly to undergo a course of instruction.

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Captain Hudson to be Surgeon-Major (dated July 16th, 1904); Surgeon-Lieutenant H. Stallard, 4th Volunteer Battalion the Sherwood Foresters (Nottinghamshire and Derbyshire Regiment), to be Surgeon-Lieutenant (dated July 27th, 1904).

IMPERIAL YEOMANRY.

Lancashire Hussars: John Tawse Nisbet to be extra-

Surgeon-Lieutenant under paragraph 30 Yeomanry Regulations (dated July 23rd, 1904).

VOLUNTEER CORPS.

Royal Garrison Artillery (Volunteers): 1st Cornwall (Duke of Cornwall's): Surgeon-Captain J. Ratcliff-Gaylard resigns his commission and is appointed Captain (dated July 23rd, 1904).

[illegible]alion the Queen's (Royal West [illegible] Captain A. M. Hickley resigns [illegible] July 23rd, 1904). 1st Cadet Battalion the Royal Fusiliers (City of London Regiment): Surgeon-Lieutenant A. R. Owst to be Surgeon-Captain (dated July 23rd, 1904).

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).

The Woolwich Companies: Maurice Waugh Renton to be Lieutenant (dated July 23rd, 1904).

THE WAR IN THE FAR EAST.

Public interest is, and for the past week has been, focussed on questions and complications connected with the action of Russia in the seizure of British vessels, and it is needless to say that the House of Commons listened with very grave attention to Mr. Balfour's statement thereon on July 25th when, despite the reassuring measures and action promised by the Russian Government, the situation was, and still remains, we regret to say, one of great gravity. As regards the progress of the war it seems to be clear that there has been a great deal of severe fighting with results that have been highly favourable to the Japanese. General Kuropatkin's forces have given way and been slowly driven to the northward, while material gains have been secured by their opponents. As we suggested last week would be the case, there seems to have been a big fight near Tashichiao, which has been captured and occupied by the Japanese, and the Russians have definitely evacuated Newchwang, setting fire to the railway station and destroying their stores before leaving. But the reports from the seat of war are somewhat conflicting and very meagre owing probably to the belligerent generals of both sides being too much occupied in field operations to frame and to forward military despatches. The Russians have been, and still must be, encountering a growing difficulty in the transport of ammunition and food-supplies along the Siberian railway and in working at the same time their system of troop-trains for reinforcing their army in the field. The condition of the R[illegible] which seems imminent has, however, still to take place. The envelopment with which that army is menaced must by this time be nearly, if not quite, complete. As regards Port Arthur, there is much in the nature of prophecy but little or nothing to record in the way of trustworthy news. The Japanese navy has throughout laboured under one difficulty: it has not been of sufficient strength—that is, it has not had a sufficient number of ships to maintain an effective blockade of both Port Arthur and Vladivostock and to secure at the same time the safety of their marine transport system from attack. It is, nevertheless, wonderful what their naval service has been able to accomplish in this war. With regard to the medical and sanitary aspects of the campaign, with which we are, of course, more especially concerned, there is a singular dearth of news. The recent losses on both sides have been severe and the transport by rail of over 300 Russian wounded, of which mention has been lately made, must be but a fractional part of the sick and wounded in General Kuropatkin's war hospitals; indeed, considerations about provision for them may have seriously embarrassed his tactics and freedom of movement. From about the middle of July to the middle of September the roads are, owing to the rains, impassable for wheeled vehicles and movement is confined to the passage of light carts and pack animals so that the sick transport must be a great difficulty to both sides. Completely isolated as Port Arthur is on the land side there must by this time be a large accumulation of sick and wounded in the hospitals of that fortress.

The *Novosti* relates that at a recent meeting of the Caucasian Medical Society Adjutant-General A. N. Kuropatkin, commander of the forces in Manchuria, was elected an honorary member for his constant exertions as to sanitation on behalf of the department under his care and his constantly sympathetic attitude to the medical men under his orders and his efforts to improve their position both as to the execution of their duties and their incomes.

Correspondence.

"Audi alteram partem."

THE INSURANCE OF MEDICAL MEN AGAINST THE DANGERS OF THEIR PROFESSION.

To the Editors of THE LANCET.

SIRS,—In THE LANCET of June 25th, p. 1811, you give a reasonably full account of the case of Eyre *v.* Scottish Accident, Life, and Fidelity Insurance Company, but with such an editorial bias as to obscure the true facts, and as the one mainly responsible for the defence I should like, by your courtesy, to address a word to the profession. An insurance company is a business concern and not a charity and has to be conducted on business lines, and this particular case was not contested for £ *s. d.* but on principle. You make it clear more than once in the course of your article that the company's agent had misled Dr. J. Eyre. Now the first question that was asked at the arbitration was whether the agent had misrepresented things to Dr. Eyre. Both Dr. Eyre's counsel and himself distinctly said "No." Is it fair and honest that this question should be again raised? Yet I find the same false statement in Dr. J. H. Bryant's letter of July 9th. Before opposing this claim I took the opinion of several of the most eminent members of the profession in London who thought Dr. Eyre's contention ridiculous, as the result proved.

With the exception of Dr. Eyre's first letter stating he had contracted Malta fever without any mention of accident (and he failed to find a satisfactory accident after the most careful cogitation) your report of June 25th is complete enough for any medical man to judge of the merits of the case. The case in a nutshell is this: Dr. Eyre contracted Malta fever (a specific fever) and he was insured against certain diseases, but Malta fever was not one of them and he claimed under the heading "septicæmia." On a parity of reasoning typhoid fever, pneumonia, and most other diseases are "septicæmia." I put it to the profession was the arbitrator's finding not right? I am very sorry for Dr. Eyre, whether his claim was founded on carelessness or conceit the result was sad for him. I am sorry for the eminent men who gave all too sympathetic evidence on his behalf, and also sorry for our profession because it only gives our legal friends another opportunity of regarding expert medical evidence in the superlative degree. I am, Sirs, yours faithfully,

JOHN MACGREGOR.

Duke-street, W., July 26th, 1904.

NOTES ON THE PHYSIOLOGICAL ACTION OF "CARBONATED" BRINE BATHS.

To the Editors of THE LANCET.

SIRS,—Since the publication of Professor T. Schott's paper in 1891 so much has been claimed for the Nauheim treatment of heart disease that it has aroused in many minds the natural suspicion which is the fate sooner or later of all reputed panaceas.

Without attempting to discuss any of the controversial points which have arisen in connexion with the treatment, the following notes of experiments made with the brine at the Saltburn baths may be of interest. The analysis of this brine is as follows:—

Sodium chloride	25·365	per cent.
Sodium sulphate	0·066	"
Calcium sulphate	0·402	"
Magnesium sulphate	0·048	"
Calcium carbonate	0·029	"
Water	74·090	"

This percentage of sodium chloride works out at 2400 grains to the pint, very little below the Droitwich water which contains 2700 grains to the pint. The stronger waters, however, do not concern the present paper, all the notes referring to experiments made with water approximating in strength to the Grosser Sprudel at Nauheim. This averages 190 grains to the pint, or rather less than 2 per cent., and no baths have been used here in connexion with these experiments containing more than 5 per cent. of salt.

Brine baths generally may be divided into three classes:

namely, (1) weak, (2) strong, and (3) very strong, containing respectively from 2 to 5 per cent., from 5 to 12 per cent., and from 12 to 25 per cent. of salt. In a future paper I hope to publish the results of experiments now being made with Classes 2 and 3, plain and carbonated, but as I have mentioned already only Class 1 concerns us now. The technique which has been adopted follows the lines laid down by Dr. L. C. T. Thorne,[1] though the first bath is given at a temperature of 96° F., patients objecting to the lower temperatures at first. Later the baths are given at 90° and even 88° but not as a rule below this point.

The carbonic acid gas is obtained from Dr. Sandow's "patent carbonated baths," the number of packets dissolved in each bath being gradually increased. Four ounces of calcium chloride are dissolved in the first bath and this amount is increased by one ounce in each successive bath until the limit of 12 ounces is reached. Baths are given on three successive days, the patient resting on the fourth day.

The question whether the chemical constituents of the baths are capable of absorption by the intact skin has been the object of study for many years and has been answered in the negative by the majority of observers. On the other hand, many continental observers—notably Professor H. Keller[2]—have shown that the skin through imbibition can and does take up certain constituents of the baths; these penetrate as far as the corium[3] and are then taken up by the lymph and blood through osmosis. The quantity thus absorbed must be in any case excessively small and the explanation of the physiological changes that occur must be looked for in the reflex action of a stronger lymph and blood stream.

The physiological changes recognised as following the brine treatment are given by Professor Keller[4] thus: 1. The sense of touch and the sensibility of the skin are both increased. 2. The osmotic pressure is raised. 3. The red blood corpuscles are slightly increased in number whilst the white are lessened. 4. Respiration is slowed and deepened. 5. The intake of oxygen and the output of carbonic acid are increased. 6. The pulse is slowed and the blood pressure is raised. 7. The baths have a distinct influence on metabolic change according to their concentration and chemical constitution, but here all observers are not agreed; in Class 1 (containing from 2 to 5 per cent. of salt) we find: (*a*) increase of urine; and (*b*) increase of chlorides, urea, and uric acid.

I find that in the few cases which I have had the opportunity of studying, these results, which refer only to plain brine baths, are rendered more striking by the addition of carbonic acid gas to the water. The effects are of course most obvious in the circulatory and respiratory systems. Diminution of the cardiac dulness occurs to a considerable extent, but the claim that this change is due to an actual shrinkage of the volume of the organ is difficult to understand; probably the alternative explanation of an increased pulmonary expansion, and the consequent interposition of resonant lung between the heart and the chest wall, is the correct one. The pulse frequency is lessened and the blood pressure is as a rule raised, although occasionally a lowering of the pressure is noticed. According to Dr. Franze,[6] low blood pressures are raised and high ones are lowered but I have not been able to confirm this statement. The heart's action becomes slower, stronger, and more regular and in some cases œdema and cyanosis disappear in a most remarkable manner.

To the patient the subjective effects are often most grateful—sleep is better, the appetite increases, and there is a sense of improved well-being and heightened tone generally.

The greatest care should be taken in the selection of cases suitable for the treatment. In the paper[6] referred to above it is claimed that valvular lesions, simple muscular weakness due to influenza, enteric fever and acute rheumatism, fatty heart, arterio-sclerosis, and angina pectoris may all be benefited by a graduated course of baths.

I believe that what may perhaps be called the indiscreet administration of different baths in the hope that one form or other will hit the mark has a tendency to bring the whole science of [illegible] ..t least certain to cause fr[illegible] worse.

These baths are undoubtedly a most powerful remedial agent and the selection of suitable cases, the consideration of individual idiosyncrasy, and more especially the careful graduation of the treatment are of the highest importance.

As Professor Keller says, clinical experience and careful experimental study must go hand in hand in the elucidation of the physiological and therapeutical effects of the baths; empirical balneology must be done away with before the science can take its place by the side of pharmacology.

I am, Sirs, yours faithfully,
R. ALLAN-BENNETT, M.B. Lond.

Saltburn-by-the-Sea, July 21st, 1904.

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[1] THE LANCET, March 21st, 1903, p. 795.
[2] Das Soolbad, Rheinfelden, 1892.
[3] Die Physiologische Wirkung des Soolbades, &c., Therapeutische Monatshefte, October, 1903.
[4] Loc. cit.
[5] *THE LANCET, July 16th, 1904, p. 140.*
[6] Franze: Loc. cit.

THE TREATMENT OF HÆMORRHOIDS AND ALLIED CONDITIONS BY OSCILLATORY CURRENTS OF HIGH TENSION.

To the Editors of THE LANCET.

SIRS,—I crave your courtesy for the insertion of a brief reply to the criticisms on my paper made by Mr. P. L. *Mummery in THE LANCET of July 16th, p. 175. As I shall* shortly be presenting a further communication on the same subject I will now confine myself strictly to the points raised in Mr. Mummery's letter.

1. I am, of course, perfectly well aware that in many cases hæmorrhoids of minor degree can be cured by slight stretching of the sphincter muscles by the occasional passage of bougies. This question of mechanical stretching, however, does not enter into the technique of Doumer's method as I have conceived it. The diameter of my electrodes is, in the first place, too small to produce mechanical stretching, and, in the second place, as I ought, perhaps, to have stated in my original communication, it is quite unnecessary to employ any force in introducing an electrode. One of the most striking early effects of the current is the disappearance of any existing spasm, so that after a minute or two a suitable electrode will slide through the sphincters almost by its own weight.

2. Mr. Mummery claims better results than mine for the routine treatment as applied at St. Mark's Hospital to acute or recent cases. I do not know what his figures actually are but I have apparently been too modest in my claims. Of the 25 acute or recent cases quoted, 14 were anatomically cured, nine others might be described as clinically cured—as they are still practically free from any local discomfort—and of the remaining two cases I may say that the abandonment of treatment was not due to any doubt as to its success.

3. I can assure Mr. Mummery that there is not any risk of the causation of either electrical or x-ray burns at the hands of anyone qualified to employ high-tension currents in medical work; neither can I see that I have made any such admission. Electricity, like any other branch of medicine or surgery, requires experience and it is not fair to judge of the risks attending its use by beginners.

4. As regards the treatment of fissure my experience shows me that the introduction of an electrode made of glass or polished metal causes far less pain than that accompanying a digital examination. In the first place, the current has a decided anæsthetic action when properly applied, and, in the second place, there is no necessity in such cases to employ a large electrode. The diameter which I most usually use varies between about three and 15 millimetres.

I am still of opinion that, both for the good local results obtained and also for the incidental beneficial effect on a patient's general condition, the method of treatment as described by me gives results superior to any other non-operative method with which I am acquainted.

I am, Sirs, yours faithfully,
T. J. BOKENHAM.

Devonshire-street, W., July 19th, 1904.

KADER'S OPERATION OF GASTROSTOMY.

To the Editors of THE LANCET.

SIRS,—I am glad to be able to add another case of this operation to the four recorded by Dr. J. C. Renton in THE LANCET of July 16th, p. 144. I performed this operation for stricture of the œsophagus in the Lincoln County Hospital on June 8th and the result has been most satisfactory. There is not the slightest regurgitation and the patient is able to pass a soft tube and to feed himself with great ease. The operation is simple, quickly done, and *appears to answer its purpose excellently.*

I am, Sirs, yours faithfully,
WM. HY. B. BROOK, F.R.C.S. Eng., M.D. Lond.,
Surgeon to the Lincoln County Hospital.
Lincoln, July 22nd, 1904.

THE USE OF PHENYLHYDRAZIN IN THE CLINICAL EXAMINATION OF URINE.

To the Editors of THE LANCET.

SIRS,—In a communication under the above heading, published in THE LANCET of July 23rd, p. 211, Dr. W. H. Willcox details certain experiments he has carried out with a modification of a portion of a method I have employed as an aid to diagnosis. To enter into a detailed criticism of his conclusions, and the experimental evidence on which they are based, is not feasible in the space afforded by a letter. I shall therefore reserve my remarks for a paper in which I hope to clear up certain misapprehensions that appear to exist and to give further details of my work. I would, however, point out that Dr. Willcox's experiments, and consequently the results he has obtained, differ materially from mine, and also that I am not aware that anyone competent to express an opinion has stated that "the production of characteristic yellow crystals in a urine after hydrolysis with hydrochloric acid" is a "specific test for any special pathological condition."

I am, Sirs, yours faithfully,
Beaumont-street, W., July 25th, 1904. P. J. CAMMIDGE.

ONE FORM OF SUPPURATIVE APPENDICITIS.

To the Editors of THE LANCET.

SIRS,—The paper by Mr. A. C. Roper in THE LANCET of July 23rd, p. 212, on One Form of Suppurative Appendicitis, is of great interest and raises points of considerable practical importance. That it is possible for caseous tuberculous mesenteric glands to set up symptoms simulating appendicitis I have no doubt. During the last few months I have made necropsies on two cases in which this occurred. One was in a young man, aged 20 years, who was apparently in good health until a few months before his death, when he had an attack of pain in the right iliac fossa with sickness and distension. It subsided in a few days and he went on well until a second attack with marked swelling in the right flank. An operation was performed but the patient died from general peritonitis. At the necropsy the abdominal mesenteric glands were found to be enlarged and caseous, especially about the cæcum. No other tuberculous lesion was discovered. The second case was in a little girl, aged three years. She had no previous illness to call attention to her condition until the symptoms which were diagnosed as "appendicitis." An operation was performed and an abscess was found in the right iliac region. She also died from general peritonitis and at the necropsy a mass of enlarged caseous mesenteric glands was found in the neighbourhood of the cæcum, one of these being merely a bag of calcareous débris. There was no evidence of tuberculosis in any other organ.

That these two cases were both tuberculous is fairly certain and from what I infer from reading the account of Mr. Roper's three cases it seems likely that they were of similar origin, especially as two of them occurred in young children.

I am, *Sirs, yours faithfully,*
University College, Sheffield, July 25th, 1904. ARTHUR HALL.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

The New Welsh Waterworks.

THE great engineering undertaking authorised by Act of Parliament in 1892, commenced shortly afterwards, and now practically concluded at a cost of something like £6,000,000 up to date, was set in operation on July 21st, when His Majesty the King visited Rhayader and turned on the tap which admitted the first stream of water to the filter-beds and on the same occasion knighted, to the great satisfaction of all the citizens of Birmingham, the very popular and most efficient Lord Mayor, Mr. Hallewell Rogers. This is not the place to give any account of this huge undertaking but *the following figures extracted from the special* account [illegible] *y Post* will give some ide[illegible] of the amount of water [illegible] storing :—

Reservoir.	Capacity.	Water area.	Height of dam.	Top water level.
	Million gallons.	Acres.	Feet.	Feet above O.D.
Caban Coch	7540	497	122	820
Pen-y-Gareg	1320	124	123	945
Craig Goch	2000	217	120	1040
Dol-y-Mynach ...	1500	148	101	900
Cil Oerwynt	3100	269	109	1095
Pant-y-Beddau ...	1900	244	93	1175

The water is conveyed to Birmingham through an aqueduct 73½ miles in length and the fall over that distance is only 170 feet, just enough to keep the stream of water steadily flowing. It takes 48 hours over its journey. The brunt of the work in connexion with the business side of these operations has fallen on the shoulders of the chairman of the water committee, Alderman Lawley Parker, and the citizens of Birmingham and of the other districts served by this supply should always feel grateful to this gentleman for the untiring and unselfish manner in which he has devoted nearly the whole of his time, for the past ten years, to the enormous task which has been laid upon him. One can hardly help feeling a twinge of regret that some mark of recognition was not awarded to the man to whom, more than to any other, the success of the undertaking is due.

Hospital Sunday Fund.

A very important change in the method of allocating this fund has just been decided upon. In the past the funds accruing have been given on one year to the General Hospital, on the second to the Queen's Hospital, and on the third to the amalgamated charities—i.e., to the remaining hospitals and institutions of like character in the city. Each institution or group, therefore, "came into benefit," so to speak, once in three years. At the recent annual meeting of the friends and supporters of the fund it was proposed by the Lord Mayor that in future the Hospital Sunday collection should be divided annually amongst all the charities participating, it being understood that the division should be in the same proportion as the present—namely, one-third to the General Hospital, one-third to the Queen's Hospital, and one-third to the amalgamated charities. In seconding the motion, which was ultimately carried unanimously, Alderman Beale said that it must make a stronger *appeal to the people of Birmingham to feel that* for the whole of the charities without distinction a particular Sunday was set aside as a day of collection, and possibly as a day upon which so many of the public who had not experienced a day's illness during the year might think of those who had not been so fortunate. He was hopeful that if ministers would point out to their congregations the change which had taken place there would be an improvement in the fund which they all knew to their great regret had been practically standing still for the past 40 years. It was time some movement was made. Other funds had grown with the growth of the town; this for some reason had stood still.

Training of Midwives.

A largely attended meeting of ladies has recently been held to discuss this matter. The Lady Mayoress, who presided, said that it was most important to secure a sufficiency of properly qualified midwives and expressed the hope that the scheme of the Lying-in Charity would be liberally supported. The management committee had purchased a site in Loveday-street for a maternity institution and a fund of £5000 was now wanted for the erection of the building. It was a lamentable fact that 60 per cent. of the births in Great Britain were not attended by medical practitioners and among the poorest classes that figure was increased to 80 per cent. It was of the utmost importance that adequate provision should be made for skilled nursing for the poor married women of the city, especially having regard to the demands of the legislature in reference to the qualifications of those who undertook this responsible work. Mrs. Wallace Bruce said that under the new Act the registration of midwives was compulsory. She spoke of the pitiful tragedies which were exposed at the coroner's court as a result of the ignorance of midwives and pointed out that the coroner had no power, although the deaths were due to ignorance, to stop these nurses continuing their work. About two-thirds of the blindness of people were due to negligent treatment at birth, while statistics showed that lunacy and disease were due to an appalling extent to the same cause. Miss Gibson, matron of the Birmingham City Infirmary, urged that what was needed in Birmingham was not monthly nurses but midwives. There was at present no place where the midwife, as such, could be trained in the city. A number of subscriptions were announced at the end of the meeting, including one of £500 from a lady who did not wish her name to be made known.

Birmingham and Midland Eye Hospital.

The annual meeting of the friends of this charity has recently been held under the presidency of Viscount Cobham. Both the annual subscriptions, which amounted to £4350 6*s*. 6*d*., and the donations (£705, including £500 from the Hospital Saturday Fund) showed an increase upon the last year. The total payments, on the other hand, showed a decrease of £219 as compared with the past year, the expenditure having been £7580. The legacies for the year amounted to £2800 as compared with £930 in 1902. The total number of patients treated, exclusive of those on the books at the commencement of the year and of renewals, had been 24,381, the out-patients numbering 23,434. The medical report showed that 682 operations were performed upon in-patients, including 263 for the removal of cataracts of various kinds and of these ten proved unsuccessful. 75 useless or dangerous eyes were removed. This hospital can certainly be congratulated upon its financial position, so different from that of most, if not all, of its sister institutions in the city, since it carried forward a balance of £8237 this year, including a balance from the previous year of £6000. In moving the adoption of the report, Viscount Cobham expressed the fear that many charitable institutions, if deficits continued, might have to come upon the rates, which, in his opinion, would be a very disastrous thing from the point of view of the administration of the institutions and also from the point of view of charity itself. The Eye Hospital does not seem to be in any danger of this fate.

The Blind Institution.

Very different was the tale told at the annual meeting of the supporters of the Blind Institution held on the same day and presided over by the same chairman. The report stated that the number of blind persons directly benefited by the charity during the past year amounted to 634 and exceeded the total of the past year by 19. The education of the blind pupils at the present time presented exceptional difficulties since there was an unusually large percentage of children in the school who suffered from bodily and mental defects as well as from blindness and this necessitated a large amount of individual and special tuition as well as great resourcefulness on the part of the teachers. The Education Act of 1902 gave permissive power to the authorities to pay for the education of the blind after the age of 16 years, the limit beyond which payments could not be made under earlier Acts. A number of authorities had been approached and had consented to pay a portion of the fees for pupils beyond the age mentioned. With regard to the trading department it was pointed out that its primary object was to provide suitable occupation for blind persons, so that they might be enabled to maintain themselves by honest industry. The sale of goods during the year amounted to £8441, as compared with £2486 in 1894. The number of blind workers had increased from 19 in 1894 to 66 in 1904. The wages had risen during the same period from £419 to £2245. Boot mending and stocking knitting had been added to the list of trades taught in the institution. The finances were still in a very unsatisfactory condition. There were a deficit on the general account for the past year of £1256 and an accumulated adverse balance of £477 on the adult blind branch account. The committee had employed every legitimate means to increase the income but the result was not adequate to the need. It was announced that the kindergarten school was approaching completion and would be opened in September. The donations towards this branch of the work amounted on March 31st to £13,493 but a sum of £4000 must still be raised if the school was to be opened, as was desirable, free from debt.

July 26th.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

The Royal Infirmary.

AN amended plan of the infirmary is to be submitted to a meeting of the trustees to-morrow. There is no alteration proposed as to the front elevation to Oxford-road. The official and administrative, the teaching and residential portions of the hospital will occupy this front. The Nelson-street frontage, which runs at a right angle to Oxford-street, will be devoted chiefly to the out-patients' department and in it will be the entrance for all patients. There is a back street, Berlin-street, which will be used for all the purposes for which a back entrance is required, while on the fourth side there will be an entrance for hearses into a closed and covered yard. This fronts to York-place and it seems unfortunate that the hearses must come and go on that side. It will not increase the amenities of that locality and it might surely have been arranged for this sad but necessary work to be carried out in Berlin-street. The medical and surgical wards are arranged in two sets of four parallel pavilions with south balconies overlooking the gardens of the hospital. All the pavilions form self-contained units, each medical ward with day and lecture rooms, physicians' rooms, &c. The surgical pavilions have operating theatre, day-rooms, &c., complete. All the pavilions are connected by glass-covered ways so designed as to isolate each in the event of fire, while there is practically no obstruction to the free passage of air "through and around" every block. The pavilions run north and south and each is separated from its neighbour by about double its height. "Each has also its separate garden with access from each floor for patients." To the extreme south-east is the isolation pavilion, while to the south-west is the pathological department with lecture theatre, mortuary, &c. The total accommodation at present provided will be 481 beds, but an addition of 108 is contemplated which will make a total of 589. The buildings will be lighted by electricity and the various lifts will also be worked by it. The heating will be chiefly by hot water under forced circulation, coal fires being used as little as possible. The buildings will be of red brick with Portland stone. The question of a receiving-house in the centre of the town and of an out-patient department there has been a good deal discussed. The committee of the Manchester and Salford Sanitary Association forwarded a resolution a short time since hoping that some provision would be made on or near the present infirmary site for an out-patients' department and for the reception and treatment of emergency cases, and similar resolutions have been sent by the committees of the Manchester and Salford Hospital Sunday and Saturday Fund and of the Red Cross Society. At the board meeting yesterday the chairman, Mr. W. Cobbett, stated that no decision had been arrived at and such decision could only be a recommendation to the trustees and must come before them at a special or annual meeting. As the removal to Stanley-grove would not take place for some four years there was no necessity, he said, for an immediate decision.

Child Mortality at Burnley.

Some of our Lancashire towns stand out in an unhappy and discreditable prominence from their high mortality, especially as regards the children. Among them Burnley at present heads the list with an infantile death-rate of 217 per 1000, the highest of the 67 large towns of England and Wales, the next highest being another Lancashire town, Wigan, with 180. In the third quarter of last year the infantile death-rate of Burnley rose to the grievous proportion of 251 per 1000. This loss of human life goes on year by year without attracting any very deep or widespread attention and with little apparent check from sanitary or philanthropic efforts. If one tries to ascertain the cause many factors are found to be at work. There are the smoky, dirty atmosphere of our manufacturing towns, the still worse air of the close and stuffy rooms in which so many live, the want of the mother's care while she is in the mill, where she goes as soon after her confinement as she is able and before she is fit to work, and the want of the mother's milk and the substitution of all sorts of unsuitable food by those who have the so-called charge of the child, sour milk from a dirty bottle being one of the least harmful. "Much of this preventable suffering and waste of life arises from ignorance which seems as dark as ever among a large proportion of our working women, while its dispersion by our elementary, so-called, education seems as hopeless as ever, thou[illegible] the educational dry [illegible] There is also another [illegible] than we like to admit—i.e., the little value attached to infant life even [illegible] people." It is il[illegible] of which I can v[illegible] domestic life of "Mary Anne" and the advent of her last baby as increasing her troubles and cares, for there were seven or eight children already, when one benevolent old woman said, "It would be a blessed good thing if it would please the Lord to take three of the littlest."

Pollution of the Irwell.

At the Bury police-court on July 21st the Radcliffe urban district council was proceeded against for sending liquid sewage into the Irwell. The works are insufficient and three inspectors found on June 3rd at midnight that "seven out of the eight tanks were running off into the river full and the eighth was being filled." This, of course, meant that [illegible] preparing efficient schemes.

The Water-supply.

The recent fine weather has caused large demands on the water-supply. On Tuesday last the consumption is said to have b[illegible] city, the quantity being [illegible]ek before last the daily [illegible]9,000,000 gallons, 5,500,000 gallons in excess of that used in the corresponding period of last year. At the end of last week the stock of water should last for 64 days at an estimated daily consumption of 34,000,000 gallons.

Public Baths for Moss Side.

Moss Side, which may be said to be in Manchester, though not of it, having an independent existence, proposes to spend £10,000 on public baths. So far the district has had to depend on those of Manchester, the nearest of which are about one and a half miles away. There are to be a swimming bath 75 feet long by 30 feet wide and 32 slipper baths, 20 of which are to be for men. The period of her isolation will, however, soon be over as in November next the Moss Side district is to become amalgamated with the city. In view of this the plans have been submitted unofficially to the baths committee of the city council. It is to be regretted that no washhouses have been provided on the ground "that the district was not of a character to need them"—i.e., that it was a little above the need of washhouses, if not of baths. There are, however, plenty of poor women in Moss Side to whom a public washhouse would be a boon of great value. It is difficult to understand the apparent reluctance to provide public washhouses in poor districts. They are valuable in more ways than one. It is evident that where the washing and drying of clothes are carried out away from the dwelling or perhaps the room occupied by a family the home will be more comfortable for the husband on return from work than if it were pervaded by steam and the smell of soapsuds and that he will be the less likely to adjourn to the public-house or the "vaults" that are sure not to be far off.

Unhealthy Carriages and Tramcars.

The efficient ventilation of our railway carriages and tramcars has not yet been accomplished and it seems as if the difficulties in the way were so great as to check rather than to stimulate efforts for overcoming them. One difficulty as to railway carriages arises from the morbid susceptibility to draughts and chills (and the consequent aversion to fresh air) of the young men who crowd the trains for the suburbs after the business of the day is over. Nothing is commoner, at all events in the neighbourhood of Manchester, than to see a compartment with both windows closed full of young [illegible] get in as they get out, even a [illegible] will find the air of the carriage [illegible] to be endured. And on the whole the first-class carriage is the worst. When one sees this arrangement for air poisoning, of which the gauntlet is run regularly twice a day, and remembers that the intervening hours have in most cases been passed in an ill-ventilated warehouse, the counting-house of which is generally the worst ventilated of all, it is not to be wondered at that most of these young men look weakly and anæmic and that too many of them die prematurely from consumption. At the meeting of the Salford council the other day Mr. Pinder, a member of our profession, drew attention to the bad ventilation of the street cars. Improvement had long been promised and he thought the time had come for these promises to be carried out, as it was important for the health of the public. The present system, he said, "was crude and the inside of the cars contained a poisonous atmosphere, while the odour, especially in the hot weather, was appalling." Another of the councillors suggested that "if the motor-man would only open the door of the car at the terminus a little fresh air might get into the car before it started its journey; but he seemed afraid of opening the door." Mr. Pinder proposed a motion, which was carried, that the tramways committee should be instructed to furnish the cars with an efficient system of ventilation May success attend its efforts, for they are needed.

July 28th.

WALES AND WESTERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENTS.)

The Housing Problem in South Wales and Monmouthshire.

THE prosperity of the mining industry in certain parts of South Wales and Monmouthshire has created problems in the housing question which have not arisen in other localities. When the colliery districts were being opened out some 40 or 50 years ago it was the custom for the colliery proprietors to provide houses for their workmen in proximity to the workings. In some instances these were one-storeyed wooden cottages and in other cases more substantial structures of brick or stone were erected. Later private speculation and building clubs sufficiently met the wants of the rapidly increasing population but during the last eight or ten years a scarcity of houses has been apparent in many districts owing partly to the increased cost of building and partly to the fact that private speculators were afraid to risk their capital in localities where the closing of a colliery renders the surrounding house property valueless. A very large number of houses have thus come to be occupied by more than one family and in many others single men are taken as lodgers. The sanitary officials are often reluctant to take steps to close uninhabitable houses because the occupants cannot find others more habitable. Many sanitary authorities appear at last to be realising that they must remedy what is recognised as a serious and growing evil. The Merthyr urban district council has erected 100 cottages between Merthyr and Dowlais and the undertaking appears so far to have been successful. The Ogmore and Garw urban district council has decided to build 100 houses in two different parts of the district at a cost of £175 per house. This decision has been arrived at owing to strong representations having been made by the South Wales Miners' Federation which pointed out that a large number of houses with only [illegible] loan of £6150 for the purpose of erecting workmen's houses and a tender has been accepted for the building of 28 houses at £200 each. The Bedwellty urban district council, after meeting with some opposition, has decided to build 16 cottages at New Tredegar, each with three bedrooms.

The Western Counties Branch of the British Dental Association.

The annual meeting of the Western Counties branch of the British Dental Association was held at Frome, Somerset, on July 22nd under the presidency of Mr. A. G. Hayman who gave an interesting address on the Progress of Dental Surgery. Papers were read by Mr. L. L. Smith on Different Methods of Treatment for Live and Dead Pulps. Mr. R. Willcox contributed Notes on Treatment of Exposed Pulps by Anæsthesia produced by Local Pressure, after which a demonstration was given by Mr. W. de C. Prideaux on Bœsch's Anchors for Porcelain Inlays. In the evening the dinner was held at the George Hotel when several members of the medical profession were present.

The Cornwall County Nursing Association and the Midwives Act.

Lord Mount-Edgcumbe in a letter to the local press draws attention to the subject of the registration of the nurses of the Cornwall County Nursing Association under the Midwives Act. He states that as a result of a meeting of members of the association and medical men it was resolved that if the County Nursing Association would make rules to insure that its nurses are not to attend a confinement without a medical man in cases where the total earnings of the patient's household exceed 30*s.* weekly and that the nurses should never interfere with the patient's selection of her medical attendant there could be no objection to the nurses being registered and practising under the Act; all the village *nurses of the association are holders of the certificates of* the London Obstetrical Society. Lord Mount-Edgcumbe adds that the committee will meet on July 30th when the matter will be finally settled, and he is anxious in the meantime that members of the medical profession should clearly understand how the association has tried to solve this difficult subject.

Shell-fish and Enteric Fever.

At the meeting of the St. Thomas's rural district council held on July 16th the medical officer of health, Mr. M. Farrant, reported two cases of enteric fever contracted from eating cockles. The medical officer of health of Torquay (Dr. T. Dunlop) has issued notices urgently advising the inhabitants of the town and neighbourhood to refrain from eating cockles and mussels. He states that most of the shell-fish sold are collected from beds of rivers into which large quantities of town sewage are poured and consequently the risk of carrying germs of disease to the consumer is very great.

Geological Model of Bath.

The medical officer of health of Bath (Dr. W. H. Symons) has completed an excellent geological model of the city of Bath and the surrounding district, covering an area of 36 square miles. The horizontal scale is six inches to the mile and the vertical scale is six inches to 1000 feet. The model has been placed in the museum of the Royal Literary and Philosophical Institution and it will no doubt be consulted with advantage by intending residents in the city.

July 26th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

University of Edinburgh Graduation Ceremonial.

ON July 23rd the summer graduation ceremonial of the University of Edinburgh was held in the M'Ewan Hall. The Vice-Chancellor, Principal Sir William Turner, presided. There were five recipients of the honorary degree of Doctor of Laws—namely, Samuel Henry Butcher, Litt.D., LL.D., lately professor of Greek in the University of Edinburgh; the Hon. Sir Walter Francis Hely-Hutchinson, G.C.M.G., Governor and Commander-in-Chief of the Cape of Good Hope; the Right Hon. John Morley, M.P., P.C., O.M., F.R.S., LL.D., D.C.L.; Sir George Reid, LL.D., D.L., lately President of the Royal Scottish Academy; and Professor William Thomson, M.A., B.Sc., Registrar of the University of the Cape of Good Hope. The degree of Doctor of Medicine was conferred on 59 graduates. Three candidates obtained gold medals—namely, Thomas Lowe Bunting, M.B., C.M., 1889, for a thesis on the Histology of the Lymphatic Glands; John Cameron, D.Sc., M.B., Ch.B. (with second-class honours), 1898, for his thesis on the Development of the Retina in Amphibia, an Embryological and [illegible] illiam Hogg Prentice, M.A., M.B., [illegible] honours), 1901, the title of his thesis being "Some Notes on the Action of African Cobra Venom." Two candidates obtained the degree of Bachelor of Medicine and Master in Surgery, while the degree of Bachelor of Medicine and Bachelor of Surgery was conferred on 124 candidates of whom nine were women. Professor D. J. Cunningham, F.R.S., Promoter of the Faculty of Medicine, delivered t [illegible] subject being the [illegible] At the close of t [illegible] nded a reception i [illegible] s entertained to luncheon in the union dining-room, Mr. A. F. Whyte, president of the union, being in the chair. In the course of the luncheon speeches were made by Mr. John Morley, Sir Walter Hely-Hutchinson, Professor Thomson, and Emeritus Professor Butcher.

Royal College of Physicians of Edinburgh.

A quarterly meeting of the Royal College of Physicians of Edinburgh was held on July 19th, Dr. T. S. Clouston, the President, being in the chair. The President made feeling reference to the loss which the College had sustained by the death of Dr. Peter Young, a Fellow of the College. Harry Oliphant Nicholson, M.D. Aberd., was introduced and took his seat as a Fellow of the College. On a ballot the following candidates were admitted to the Membership of the College after examination: James Cameron, M.D. Edin., Edinburgh; George Douglas McRae, M.B., C.M. Edin., Edinburgh; Alexandre da Fonceca Dias, L.R.C.P., L.R.C.S. Edin., Edinburgh; Theodore Charles Mackenzie, M.B., Ch.B. Edin., Edinburgh; and Thomas Garnet Stirling Leary, M.B., Ch.B. Edin., Castlederg, Tyrone. The Registrar reported that since the last quarterly meeting 31 persons had obtained the licence of the College by examination. The regulations regarding the single licence and membership and fellowship of the College for the ensuing year and the regulations for the triple qualification were approved. The Hill Pattison-Struthers bursary in clinical medicine, which is in the gift of the College, was awarded after examination to Mr. James Watson. With regard to the proposed institution of an academic dress distinctive of licentiates of the College, it was resolved to delay consideration of the matter.

City of Glasgow Fever Hospital, Ruchill.

Dr. Alexander Johnston, physician and superintendent of this hospital, recently submitted to the committee on health the report of the hospital for the year ending May 31st, 1903. The number of admissions for the year amounted to 2047, whereas for the two preceding years they numbered 3012 and 2251 respectively. This represents, says Dr. Johnston, the comparative scarcity of infectious diseases in the city of Glasgow. The general mortality-rate was 8·8 per cent. Nearly 60 per cent. of the new patients admitted were under ten years of age. The number of cases of scarlet fever numbered 847, or 41·2 per cent. of the total admissions. 21 of these patients, or 2·4 per cent., died, the lowest mortality rate on record in the history of the City of Glasgow fever hospitals. The cases of diphtheria numbered 215, with 42 deaths. The mortality rate of 19·5 per cent. was the highest yet recorded in Ruchill, but of the fatal cases 20 were admitted moribund. 246 cases of enteric fever were admitted of which 45 died, giving a mortality rate of 18·2 per cent. The number of cases of measles was 159, the death rate being 6·2 per cent. The deaths from this disease were almost all due to pulmonary complications, and no death was recorded of any patient over ten years of age.

July 26th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Dispensary Medical Officers.

THE latest device to deprive the unfortunate dispensary medical officer of one of his few remaining privileges has recently been put in practice at Kinsale. Hitherto, where a medical officer was able to obtain a month's holiday, he was permitted to choose as a substitute some friend or neighbour to whom he could intrust not only his public duties but also the charge of any private patients whom he chanced to have in his district. Now, the boards of guardians have apparently determined to nominate for themselves as a locum-tenent any man whom they choose to elect as their favourite. It seems tyrannical. At the last meeting of the board of guardians of the Kinsale union

on July 20th Mr. W. G. Meade was given four weeks' leave. He recommended Mr. J. Keating, whose district adjoined, as his substitute, but the guardians insisted on appointing another man from the neighbourhood, whereupon Mr. Meade withdrew his
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pensary duties with also t
if, in fact, he could not go away on his vacation comfortably, he would prefer to remain at home. At the same meeting Mr. A. O'Leary recommended Mr. J. Shorten, whose district adjoins, as his temporary holiday substitute. The guardians, however, proceeded to appoint a local practitioner whom they selected. Mr. O'Leary took the same view as Mr. Meade, with the result that both medical officers withdrew their applications for leave and elected to remain at home. The situation seems disgraceful and one is inclined to ask, Where is the Local Government Board? As to the grievance in reference to salary, at the meeting of the Bantry guardians held on July 19th, Mr. Bennett of Bantry appeared before the board as the representative of the Irish Medical Association and asked the board to fix the salary for the district of Glengarriff at a higher amount than £100 a year, as it would be impossible for any medical man to live in that backward district where there
an income.
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ions on that
made, they
would increase the amount. English visitors will remember that during the
is near
Killarney, is one
Islands.
Many think it
even an
Irish dispensary
scenery.

Dublin Sanitary Association.

The council met on July 21st at the offices of the association, the President occupying the chair. The progress of the outbreak of measles in Dublin was traced by a reference to the Registrar-General's weekly returns. It appears that *on Saturday, July 9th, there were 83 cases of this disease* under treatment in the Dublin hospitals and on Saturday, July 16th, there were 77 cases. During the week ending July 23rd ten deaths were registered from measles, the numbers during the preceding three weeks being one, two, and two respectively. The following motion was adopted unanimously:—

ses should be
ing those sick

New Medical Magistrate.

The Lord Chancellor has appointed Mr. John F. Sydney Colohan of Blackrock a justice of the peace for the county of Dublin on the recommendation of the Right Hon. the Earl of Meath.

The New Royal Victoria Hospital, Belfast.

Those who make a study of hospital construction, and especially of the much debated question of heating and ventilation, will be interested to learn some facts as to the working of the plenum system in the new Royal Victoria Hospital, Belfast, which was opened by His Majesty the
work of heating and ventilating
e has been very successful. The
in the open air in the neighbourhood of the hospital was 22° F., while inside the institution the average temperature was kept at from 59° to 62°. The average weekly consumption of coal during the winter was 45 tons. This fuel is used to heat the boilers which provide the steam for the engines which work the great fans of the plenum system. This steam is also used to heat pipes which warm the air; it is likewise employed for sterilising

with the plenum system. During the present summer the highest temperature so far has been 124° in the sun or 79° in the shade, while at the same time the
wards was 65°. The average temperatur
been from 63° to 65°, with an outside he
the summer the average consumption of
18 to 20 tons per week. In the winter one
but in the summer it has been found necessary in order to keep the wards cool to have the two fans going, because in this way the air is changed in the wards ten to 12 times in an hour. In the winter it was found sufficient to change the air seven to eight
hour and one fan was enough to do
been kept in action since June 1st
ntinued until the end of September.
the second fan, the engine being so constructed that it is underloaded with one. In the lofts above the engine house there are tanks of water with an automatically-regulated overflow, so that in winter 15 gallons flow over three screens
washed every ten minut
over six screens every
screens are "hosed" every second day and the main air duct washed out once a week, so that as a result the air as it enters the wards is deprived of impurities and leaves no trace of discoloration.—Lord Dunleath, who is closely connected by family ties with Belfast, has given £1000 to the Royal Victoria Hospital to endow two beds, "The Dunleath Beds," in the Mulholland Ward, which was named after his grandfather, the late Mr. Andrew Mulholland. It is hoped soon that another unit—that is, 32 beds—will be opened.

Ulster Branch of the British Medical Association.

For the session 1904–05 Professor J. A. Lindsay has been elected President, Dr. Cecil E. Shaw secretary, and Dr. J. S. Darling (Lurgan) treasurer.

Action against a Medical Man.

A case which
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simply state the facts. The action was brought by Alfred Ernest Tughan, a minor, by his father, against Mr. C. K. Darnell of Bangor, co. Down, to recover £250 on account of personal injuries alleged to have been sustained by reason of the negligence *of the defendant. A very strong* bar was *engaged on* each side, the defence being in the hands of the Medical Defence Union. It appears that the young gentleman, Mr. Tughan, the plaintiff, who is just over 17 years of age, had been suffering from mumps in Belfast and on recovering was taken to Groomsport, a seaside resort near Bangor, on Belfast Lough, and that while there he developed the rather rare complication orchitis as a sequela of the mumps and Mr. Darnell was on April 4th called to see him. Mr. Darnell explained what was wrong and wrote two prescriptions, one for internal medicine and the other for external
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part until April 9th. Half a yard of lint was ordered together with half a pound of absorbent wool for a cushion. The mother applied the liniment with the result that the skin became blistered and belladonna poisoning set in. Mr. Darnell had in the meantime left home and the plaintiff's father employed other medical men—one in Bangor and two from Belfast, one of these being his brother-in-law. For the defence it was contended that the defendant specifically directed that the liniment was to be used only in case pain arose and his case was that the wrong use of it by the boy's mother did the harm. Further, Mr. Darnell swore that he told the plaintiff's father that he was leaving home for a few days and that if the boy was not so well his father was to get any of the other medical men in Bangor, and when Mr. Darnell's wife was told that the boy was ill she sent a local medical practitioner to see him. The Belfast consultant who saw the boy with this Bangor practitioner was not called by the plaintiff. For the defence several medical men were called, their evidence supporting the contention that the treatment as directed by Mr. Darnell was correct. The judge in an impartial summing up left the case to the jury who after an absence of an hour and 15 minutes announced that they had not agreed and as the foreman said in reply to the judge that there was not the slightest chance of their agreeing they were discharged.
e case being still undecided no reference
to the extraordinary attacks on the medical
a body, on medical testimony and etiquette,
Medical Defence Union which acted for the

July 25th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Destruction of Mosquitoes.

SEVERAL parts of Paris are so infested with mosquitoes that at a recent meeting of the Conseil d'Hygiène et de Salubrité de la Seine a report on methods by which they might be kept in check was considered. The following is a summary of the conclusions which were adopted. In the first place stagnant water where their eggs are hatched and localities where the insects collect, such as cellars, sewers, and dark places, ought to be kept under observation. It was necessary to have regular inspections of drains and sewers of all kinds and of the openings of the pipes which supply water in the streets, to avoid collections of stagnant water, and where insects assemble in numbers to them either by a burning torch or by lime-w. Stables and privies ought to be kept very clean, roofs and rain-water gutters ought to be examined, and water ought not to be allowed to lodge in the gutters. Nothing capable of holding water should be placed in front of windows and places which are the haunts of mosquitoes should be well ventilated. Stagnant water should not be allowed to remain in gardens and courtyards. Fountains and basins in public places should be emptied and cleansed at least once a week and plenty of fish should be kept in large sheets of water. In basins and casks standing on private ground there should be a layer of petroleum oil on the surface of the water (about a gramme per square metre) or if the water contains fish a layer of salad oil. The public should be advised to use mosquito curtains. Mosquito bites should be treated with a drop of tincture of iodine or with a drop of a solution of guaiacol of 1 per cent. strength.

Lactation and Pathogenesis.

At a recent meeting of the Academy of Sciences M. Charrin and M. Vitry said that lactation was generally considered to be capable of producing in the organism a series of changes more or less favourable to the development of disease and experiments made by them had shown the nature of these changes. In a guinea-pig which was in milk the convulsions brought about by a dose of strychnine were both earlier and more intense than those due to the same dose administered to a guinea-pig which was not in milk; death was sometimes even caused by doses which were not fatal to the control animal. The power of resistance to infection was similarly weakened; a dose of a culture of bacillus pyocyaneus which would cause only a temporary lesion in the control animal might prove fatal to an animal giving milk. This diminution of resisting power was partly due to the attenuation of the antitoxic protective substances and more particularly to the diminution of the antitoxic power of the liver. A piece of normal liver left in contact with a solution of nicotine weakened it more than an equal weight of liver substance taken from an animal giving milk. If to these causes were added hyperglycæmia and fæcal retention it would be seen that lactation predisposed to disease by accumulating organic poisons, by diminishing the natural powers of resistance to such poisons, and in establishing conditions favourable to infection; it, in fact, prolonged the dyscrasiæ associated with pregnancy.

Public Medical Service in Madagascar.

At a meeting of the Academy of Medicine held on July 12th M. Kermorgant communicated some particulars taken from a report presented by General Gallieni relative to the working of the medical and public health services for natives (*assistance médicale et de l'hygiène publique indigène*) in Madagascar during 1903. On Jan. 1st, 1904, the service received the important addition of a school of medicine to which was attached a native hospital, a Pasteur institute at Tananarive, a station for the production of vaccine lymph at Diégo Suarez, a central pharmacy, 129 hospitals containing 1867 beds, ten dispensaries, 17 stations for midwives, and seven leper hospitals. The hospital of the colonial service and certain private establishments also gave assistance. The medical service leaves nothing to be desired in the provinces of the central plateau; the total outlay on it was 1,019,042 francs (£40,760); 16,788 persons have been treated in the hospitals; 3079 lepers have been isolated; 1,023,425 patients have received advice; and 70,991 vaccinations have been performed. There has been a notable increase in the number of cases of malaria, attributable, it would seem, to the fact that after the rice has been harvested the rice fields are again flooded with water instead of remaining dry, as in former years, and the mosquitoes therefore breed more freely. The birth-rate in Madagascar is considerably higher than the death-rate.

Disadvantages of Sterilised Food.

If full-grown animals are kept in a sterile atmosphere and fed on sterilised food their vitality is brought down below that of control animals treated similarly in all respects except that the access of microbes to them is not interfered with. This has been already proved by M. Charrin and at a meeting of the Academy of Sciences, held on July 11th, he gave an account of new experiments which supply an explanation of the phenomena. Proportionally to their weight all the animals received the same quantity of the same sterilised in the same way at 100° C., but carrots for the control animals were dusted over with some of the earth which had previously covered them. In these circumstances, the animals fed on the sterile food generally died in from three to five weeks, predeceasing the control animals. In the few cases in which guinea-pigs after ingestion of microbes died before the others the usual reason was that exceptionally virulent bacteria had been introduced along with the dust. In the animals fed aseptically enteritis with retention of bile and softening of the walls of the ileum was common. The microbes soon became less numerous; those which usually occurred in the intestine were normally in that situation under disadvantageous conditions owing to the presence of phenol, ammoniacal salts, mucus, and competing forms of life, as well as to the scanty supply of oxygen for the aerobic organisms; importations from without, especially those which came with the food, were therefore necessary for keeping up the stock. Cultures made in glass with material taken from the guinea-pigs fed aseptically showed only cocci, the bacilli having disappeared, whereas in the control animals at the same stage of the experiment the latter forms predominated. In the animals fed aseptically albumin was less quickly peptonised and cellulose was less readily attacked than in the others. The nutritional conversion of cellulose and the proteid constituents of the food was diminished in the animals fed aseptically and these substances acted as foreign bodies, membrane and producing symptoms of their consequences. It was therefore plain that some microbes were not only not injurious but were of decided utility and that the conditions in which the sterilisation of food was advisable still remained an open question.

Accidents in Laboratories.

While M. Dubreuil, *agrégé* of the University, was engaged in some researches in the laboratory of the École Pratique des Hautes Études a flask of hydrogen exploded and a laboratory assistant received an injury which resulted in the loss of his right eye. He therefore brought an action for damages against M. Dubreuil and the State. The director of the school, being a public teacher, is legally responsible for the harm done by his pupil M. Dubreuil, and the State being represented by the director is consequently responsible also. The court, however, without controverting this argument, dismissed the claim made by the assistant against the State, but M. Dubreuil was ordered to pay him an annuity of 500 francs.

July 26th.

UNIVERSITY OF DURHAM COLLEGE OF MEDICINE, NEWCASTLE-UPON-TYNE.—During the past year there have been 1122 specimens examined in the bacteriological department, showing an increase of 184 over the previous year. The great majority of the specimens are examined for the various county councils and public institutions in the neighbourhood. Out of 650 specimens of sputum examined for tubercle bacilli 39 per cent. were found to be positive. Out of the 223 cases of suspected diphtheria 35 per cent. were found to be positive, whilst from 79 specimens of blood from suspected cases of enteric fever 32 per cent. were positive. The Newcastle water was examined every month, also water for other public bodies. Ten specimens of blood were examined for anthrax with positive results in five cases. Tubercle bacilli were found in urine in five cases out of 39.

THE
BRITISH MEDICAL ASSOCIATION.
MEETING AT OXFORD

THE seventy second annual meeting of the British Medical Association commenced at Oxford on Tuesday last and marked the fourth occasion on which the Association has chosen the university city for its annual meetings Unfortunately the meeting has not been favoured with good weather On Monday afternoon just as visitors began to arrive, a thunderstorm accompanied by torrents of rain broke over the city and rain continued to fall more or less heavily all night On Tuesday the morning was fairly fine but the afternoon and evening were a repetition of Monday Wednesday, again, opened very badly and the rain continued for the best part of the morning The bad weather was the more unfortunate that Oxford is pre eminently a place which needs sunshine to show off its beauties The gardens and groves, such as those of Magdalen New College and Worcester, lose half their charm when visited under a grey dripping sky

The means of getting about in Oxford are of the primitive order, there being only a few horse tramcars and omnibuses with very long intervals between their running The citizens apparently largely rely on their cycles for locomotion and have a fine disregard for the terrors of side slip as they cross and recross the not too well laid tracks in the neighbourhood of the heart of the city Fortunately, cab fares are reasonable with the consequence that the weather has made the cab-driver busy

The service held in Christ Church Cathedral at 10 30 A M on Tuesday was exceedingly well attended The sitting accommodation was in fact strained to the utmost and it was stated that the congregation was one of the largest ever gathered together in the chief church of the diocese The assembling of the congregation was imposing as those wearing academic robes took their places The mayor and his civic staff occupied seats in the choir The Rev the Master of University College preached the sermon The alms, as is usual were devoted to Epsom College and the British Medical Benevolent Fund There was also a special Mass at the Church of St Aloysius at the same hour

On Tuesday evening the President of the Association, Dr William Collier delivered his address in the Sheldonian Theatre The beautiful building (one of Wren s earliest works) was filled by an audience gathered from many a university and by a number of ladies Academical dress was, of *course, worn by those* who had a *right to do so* , but there existed an unfortunate diversity of opinion as to what "academical dress meant and the "use was exceedingly varied Some doctors wore their scarlet gowns either with or without hood, others wore the undress gown with a hood (this, of course, is obviously wrong), and others wore the undress gown by itself However, the general effect was a very charming mass of colour

The proceedings commenced by the Vice Chancellor, Dr D B Monro, welcoming the Association on behalf of the University, and he was followed by the mayor, Mr E A Bevers, M R C S , who performed the same office on behalf of the city The Middlemore prize was then presented to Mr J H Parsons for his researches in ophthalmology, after which the President announced the election of the following gentlemen as honorary members of the Association in recognition of their valuable services in connexion with the meeting The Vice Chancellor of the University of Oxford (Dr Monro), the Dean of Christ Church (the Very Rev Thomas Banks Strong D D), and the Master of University College (the Rev James Franck Bright D D) Then followed the presentation of the distinguished foreign guests and colonial delegates among the former being Professor William Osler of Baltimore, Dr Edmund Landolt of Paris, Professor Hirschberg of Berlin, and *Professor Guglielmo Romiti* of Pisa, while the colonial delegates came from practically every part of the empire Dr Collier then delivered his presidential address, which will be found in another column

It was confidently anticipated, owing to the splendid attractions of Oxford that the attendance of members would be large and this did much to secure an increased application for space in the Annual Exhibition of Foods, Drugs and Surgical Appliances The exhibition was held in two palatial rooms on the first floor of the Examination Schools in the High street, the space afforded was generous and altogether the exhibitors evinced excellent taste in displaying their exhibits On no previous occasion has the exhibition been held under more favourable auspices and although the satisfactory attendance of visitors may be attributed partly to the fact that the reception room and general meetings room were situated in the same spacious building, yet apart from this, there was an evident increasing interest in this important section of the annual meeting

A welcome feature in this year s exhibition was the display of scientific apparatus We have often urged that considerable prestige would be added to this section of the proceedings if some really scientific demonstrations could be arranged It must be admitted that on the whole the annual exhibition wears a business aspect against which, *however nothing can be said so long as* trade is conducted on dignified lines The claims of many new drugs and foods are occasionally pressed with perhaps a little more zeal than the visitor appreciates This is pardonable when the chances which the exhibitor has of actually bringing his specimens under the eye of busy practitioners are considered It cannot be denied however, that the annual exhibition is of decided value to the medical man who means to keep pace with the advances made in pharmaceutical preparations in special foods surgical apparatus and so on All the same it is a relief to him to confront if only occasionally a really scientific demonstration, and the opportunities which have been afforded this year may be noted with satisfaction

Probably the majority of the exhibits could be placed in the category of surgical sanitary, and hospital appliances, and generally speaking perhaps the exhibition had a greater interest for the surgeon than for the physician New drugs, synthetic remedies or methods of administration seemed decidedly less in evidence than has been usually the case In another column the various exhibits are dealt with in some detail and while the convenient classification adopted in previous years is the same, the various sections are taken in a slightly different order in accordance with the scale on which they were represented

In a Convocation held on Wednesday in the Sheldonian Theatre, which was filled with a brilliant gathering, the degree of D Sc , *honoris causa*, was conferred upon the following gentlemen Thomas Clifford Allbutt, M D , F R S , Regius professor of physic at Cambridge , Andrew Clark, F R C S Vice President and chairman of the Council of the British Medical Association , Thomas Dryslwyn Griffiths, M D , late President of the British Medical Association , Jonathan Hutchinson, F R S , late President of the Royal College of Surgeons, Sir William Macewen, M D , F.R.S., Regius professor of surgery in the University of Glasgow; Sir Patrick Manson, K.C.M.G., M.D., F.R.S.; Sir John William Moore, M.D., late President of the Royal College of Physicians of Ireland; and William Osler, M.D., F.R.S., professor of medicine at Johns Hopkins University, Baltimore. The various recipients of the degree were severally introduced to the Vice-Chancellor by the Sedleian professor of natural philosophy, Professor A. E. H. Love, D.Sc.

During the meeting the question of medical defence has been more or less hotly discussed. It has now been finally decided by the representative meeting that the question of medical defence, as submitted to all the divisions of the Association, shall be referred to the original committee that dealt with the question, with instructions that in framing any scheme of medical defence both collective and individual defence should be included. There has been a considerable amount of talk pointing to the idea that medical defence should be provided for members of the Association without any increase of subscription, but the notion has failed to secure sufficient support at any meeting of the members to make it an instruction for the committee concerned with the matter to consider it. This committee, however, has been charged with the duty of stating, in its revised scheme, or statement, to be submitted to the divisions, in what way provision is to be secured for the amalgamation of the existing medical defence societies. It is not to be wondered at that the problem of medical defence has been referred to the committee, nor will this course of events come as a surprise to the most ardent advocates for immediate action.

To many members of the medical profession visiting Oxford Trinity College presented considerable attractions, not only for its architectural details but also for the interest attaching to it as the place where in the troublous times of Charles I. "so great a doctor" (as Aubrey called William Harvey) went "several times to George Bathurst who had a hen to hatch eggs in his chamber, which they opened daily to see the progress and way of generation." William Harvey stayed in Oxford occupied with his researches for so long that the wardens and masters of St. Bartholomew's Hospital placed a Dr. Micklethwayte in his position at that institution, accusing Harvey of having withdrawn himself from his charge and betaken himself to the party in arms against the Parliament. Merton College, however, at that time had a warden named Brent who was accused of absenting himself from his duties for three years, of joining the rebels, and of signing the Covenant. William Harvey was elected warden of Merton College in his place and informed the Fellows assembled in the Great Hall that though previous wardens had most likely joined Merton to enrich themselves he only wished to enrich the College, and he exhorted them to cherish harmonious friendship among themselves. During Harvey's term of office at Merton the College must have presented an animated appearance for its chambers were crowded with officers quartered there and the Queen lodged in the warden's house, occupying the room shown to many visitors this week as "the Queen's Room."

We have again to record our indebtedness to Mr. Guy Elliston, the general secretary of the Association, and to his staff, for the courtesy and much appreciated help extended to the representatives of THE LANCET in several directions.

The seventy-third annual meeting of the Association will be held at Leicester in 1905, Mr. G. C. Franklin, F.R.C.S. Eng., being nominated as President-elect.

THE GENERAL MEETINGS.

THE FIRST GENERAL MEETING.

The first general meeting was held in the Examination Schools, High-street, on Tuesday, July 26th, at 12 noon.

The chair was occupied by the retiring President, Dr. T. D. GRIFFITHS, who, in addressing the meeting, referred in sympathetic terms to the loss sustained by the medical world through the death of Sir John Simon. "We may affirm," he said, "that he has saved far more lives during the last 50 years than all the armies of the world have destroyed during the same period." Dr. Griffiths then proceeded to review the work of the Association during the past year and observed that they had arrived at the close of the first year of their new constitution and the result was fully in accordance with their anticipations. The changes and the alterations were now practically complete, the various divisions, numbering 300 altogether, had settled on their own rules and regulations, and he drew attention to the great advantage accruing from the divisions —viz., that they answer all the purposes of local medical societies. The speaker then drew attention to a further gain attained by the reconstruction of the Association in securing additional power to promote the interests of the profession, to improve public health, and to protect the well-being of the community by guiding and influencing legislation in Parliament. The retiring President then formally introduced the new President, Dr. William Collier.

Dr. COLLIER in taking the chair expressed his thanks to the members for the high honour conferred on him. He soon secured the sympathy of those present by the earnest manner in which he spoke of his duties, whilst his humorous description of the difficulties incident to the meeting of the Association at Oxford put him on good terms with his audience. He hoped, he said, that the members of the Association would not trouble to appear at Oxford in the obsolete garments of conventionality but would revel in light hats, light coats, and light hearts.

Dr. J. H. GALTON proposed, and Mr. W. JONES MORRIS seconded, a cordial vote of thanks to the retiring President which was carried with acclamation.

After Dr. GRIFFITHS had made a suitable acknowledgment, the following gentlemen were elected honorary members of the Association for valuable services rendered to the Association in connexion with the Oxford meeting: Dr. D. B. Monro (Vice-Chancellor of the University of Oxford), the Very Rev. Thomas Banks Strong, D.D. (Dean of Christ Church), the Rev. James Franck Bright, D.D. (Master of University College), and Professor A. G. V. Harcourt, M.A., F.R.S. The chair was then vacated by the President in favour of Mr. ANDREW CLARK, chairman of the Council, who called upon Dr. E. M. Skerritt, the treasurer, to propose that the financial statement for 1903 should be received and adopted. This was duly proposed by Dr. SKERRITT, and after Dr. J. HADDON, Dr. J. BRASSEY BRIERLEY, and Mr. E. H. T. NASH had spoken, and been replied to by Dr. SKERRITT, the motion was put to the meeting and duly carried.

After passing some more or less formal votes the meeting adjourned.

THE SECTIONS.

MEDICINE.

WEDNESDAY, JULY 27TH.

Discussion on the Treatment of Chronic Renal Disease.

After a few introductory remarks by Dr. W. T. BROOKS (Oxford), President of the section, a discussion on the above subject was opened by

Dr. W. HALE WHITE (London) who said that he intended to limit his remarks in the discussion to the consideration of the treatment of chronic interstitial nephritis. So little was known of the pathology of the disease that the treatment fell naturally under two headings: (1) the treatment of particular symptoms; and (2) treatment employed according to the physician's theoretical views on the nature of the disease. Albuminuria was a symptom frequently treated. The mere presence of albumin in the urine was of itself of no importance, except as an aid to diagnosis, as the amount of proteid lost daily in the form of albumin was very small. Albuminuria occurred in heart disease, fevers, calculus, and other conditions, and was never treated in those cases.

The loss of albumin was at most only a few grammes a day and might be compensated for by more in the food. Albuminuria was, however, a very important help to the diagnosis and prognosis of Bright's disease but the records of it were usually of little value as they noted only the percentage and not the total quantity of albumin Not only was the treatment of albuminuria as such unnecessary but in many carefully observed cases a milk diet, which is relied upon to diminish albumin, failed to accomplish this The cardio-vascular system required most notice from the point of view of treatment in chronic renal disease Many patients had a high tension pulse and a hypertrophied heart, in such cases the tension must be reduced by restricting exercise, regulating the bowels, avoiding alcohol, meat extractives, excess of meat food, and the drinking of much fluid Digitalis should never be ordered for such patients In a second class of cases the tension of the pulse was too low and the heart was weak Over and over again physicians forgot that to starve one part of the body involved starvation of the whole, and thus patients kept on a small milk diet in the hope of relieving the kidneys became enfeebled in their general health with consequent cardiac failure Such patients improved on ordinary diet, with a moderate amount of meat and alcohol Some patients were kept too much in bed, with the result that the heart became feeble; they improved when they were allowed to get up On the other hand, many patients took too little exercise and became fat and some drank too much water. In both conditions the work of the heart was unduly increased The physician should endeavour to keep the vascular tension normal without the aid of drugs Œdema in chronic nephritis rarely required treatment except when due to secondary cardiac failure The bowels should be well opened and the fluid ingesta restricted In severe œdema diuretics should be avoided and diaphorectics were of little use. Puncturing the legs with needles or Southey's tubes was the best method of relieving both local and distant œdema, but it should be remembered that no operation required greater care in avoiding sepsis. Turning to the consideration of treatment as influenced by theoretical views of the nature of the disease, substances supposed to irritate the kidney, such as turpentine and cantharides, should never be employed and mercury and lead should never be given for any length of time There was wide divergence of opinion as to the administration of morphine, undoubtedly it checked uræmic convulsions, but it sometimes killed the patient Alcohol was permissible in small quantity when the heart was weak to aid digestion and to promote sleep Patients with chronic interstitial nephritis were often dieted too zealously under the impression that certain articles of food irritated the kidneys, there was no proof of this and no series of cases had been published to show that either chicken, fish, red or white meats were harm[illegible] diet when they loathed the sight of it Tea, coffee, and tobacco should be used in moderation by sufferers from chronic nephritis, as either of these in excess caused a rapid and irregular pulse An excess of water was often given to flush the kidneys and to clear away dead epithelium but where [illegible] dead epithelium the œdema [illegible] subside when much water wa[illegible] that excessive water drink[illegible] metabolism and the work of the heart The symptoms of uræmia were suggestive of a poison in the blood, but there was no evidence that it was derived from the food A woman took 5000 kilocalories of food a day for 55 days, during that time she retained 120 grammes of nitrogen but no uræmic symptoms developed Probably the uræmic poison was formed from the tissues of the body The physician could only aid the elimination of the poison by means of hot air baths and hot drinks to assist perspiration or by transfusion of saline fluid. Pilocarpine was apt to cause œdema of the lungs Chloroform relieved uræmic convulsions Egypt had an ideal winter climate for patients with renal disease, but it should be remembered that warm clothes were required after sundown and proper food for invalids might be difficult to obtain far up the Nile

Professor CARL VON NOORDEN (Frankfort, Germany), alluded to the paper which he read at the Manchester meeting of the British Medical Association regarding several points of treatment of chronic Bright's disease First, regarding the difference of white and red meats he was the first who showed by scientific investigation that the red meats were no more harmful than the white meats in chronic Bright's disease All the publications which had appeared since then agreed with his opinion, as did also Dr Hale White Secondly, regarding the supply of water in chronic Bright's disease, he had shown by clinic[illegible]tion and research on [illegible] (one and a half litres [illegible] of urea on the one hand, and on the other it spared the heart A third question studied by Professor von Noorden was the amount of muscular exercise advisable in chronic renal disease He did not consider it wise to keep the patient in bed, as many French and German physicians had done It was better to give cautiously a systematic muscular training, with special reference to the heart Albuminuria rose during the first few days or weeks of such treatment and then diminished again It was preferable not to undergo the training in muscular exercise at home, better results were obtained at hospitals and health resorts A fourth question was the treatment of the dangerous and frequent complication of obesity Care should be taken not to reduce obesity too rapidly in cases of chronic renal disease A healthy person might lose from four to six kilos in a month, when chronic renal disease was present four months should be allowed for the same loss of weight Professor von Noorden referred to the importance of not checking the diarrhœa in uræmia, and mentioned that he had found by experiment that the greatest amount of nitrogen excreted by the skin in one day was three grammes, and by the bowel eight grammes

Sir JOHN MOORE (Dublin) stated that deaths from [illegible] on in Dublin Chronic [illegible] than chronic interstitial [illegible] had become much less common since the city had had an abundant soft water supply from the Vartry river He regarded the lungs as an important path of elimination and therefore open air treatment was as important in chronic renal disease as in pulmonary tuberculosis Uræmic coma was often averted by giving 20 grains of benzoate of soda He had tried with unsatisfactory results the method of treatment lately recommended by Professor Renaut of Lyons, which consisted in administering macerated fresh pork kidneys

Professor JAMES TYSON (Pennsylvania) agreed with Professor von Noorden that red and white meats were equally suitable in chronic renal disease and that water in excess was dangerous. Morphine was in most cases unsuitable but it might be given without danger in uræmic convulsions occurring in a case of chronic parenchymatous but not in interstitial nephritis Methylene blue was eliminated in parenchymatous but not in interstitial nephritis and the same [illegible] He quoted a case of [illegible]g his belief that de[illegible] cure the disease

[illegible] (London) regarded water as of considerable use for flushing the kidneys, especially when taken apart from meals The progress of a case of chronic renal disease could not be judged by the amount of albumin; the specific gravity was much more important Mild repeated doses of mercury had more effect in reducing arterial tension than salines The worst symptoms of uræmia were dependent not upon poisons but upon arterial tension Uræmic convulsions were of circulatory origin He referred to a case of convulsions which in his view was due not to renal disease but to high arterial tension in which bleeding was followed by complete recovery and non recurrence The hot air bath required considerable discussion, for they might determine convulsions by weakening the heart

Professor ROBERT SAUNDBY (Birmingham) quoted several cases of great interest in illustration of the longevity of some cases suffering from renal disease One was a case of a young man who had been previously seen by the late Sir George Johnson and warned to avoid athletics, he, however, persevered in outdoor sports and was seen by Professor Saundby 20 years later when he had cardiac hypertrophy, hard radials, a considerable amount of albumin, and some tube casts in the urine Professor Saundby had seen cases of nephritis during pregnancy accompanied by albuminuric retinitis which had completely recovered excepting from the eye symptoms

Dr SAMUEL WEST (London), addressing himself in the first place to the question of diet, remarked that in acute nephritis it was usual to place the patient upon a milk diet, and rightly so, considering that it was mainly by the kidneys that effete nitrogenous products were eliminated; but during convalescence milk was not the best food for adults, their nutrition suffered, and the advantage of a change from milk to a more varied and liberal diet was a matter of daily experience. With granular kidney the case was somewhat different and these patients, in his experience, never throve upon a purely milk diet. The amount of albuminuria could never be taken as the guide to the diet required, excepting perhaps that where much albumin was present in the urine, as little albumin as possible should be given in the food. Turning to the use of drugs, digitalis was useful when the tension was low and antimony when it was high. In chronic parenchymatous nephritis the tension was almost always low and in this condition digitalis was the stock remedy because of its action on the heart as well as on the arteries. The normal tension in granular kidney was raised, but it might vary in either direction, the high tension being also either further raised or even becoming low, and treatment must be adopted accordingly. Antimony was not a good remedy in granular kidney for it produced much depression. Of the other drugs which reduced tension the most important were the nitrites and after them pilocarpine. Chronic uræmia consisted of the cachexia which developed in chronic renal disease and it was just such a general deterioration of health as the want of an internal secretion might produce; it was for this especially that renal extracts had been given. Acute uræmia, acute renal toxæmia, was a very different condition. It was due to some internally toxic substance circulating in the blood and a rational method of treatment would seem to be abstraction of blood associated or not with intravenous saline injection. Another method of more promise was the saturation of the blood with oxygen with the object of oxidising these venomous substances and thereby diminishing or removing their toxicity.

Dr. J. **FINLAYSON** (Glasgow) endorsed the remarks of previous speakers on the advisability of treating chronic renal affections on a totally different plan from that pursued in acute nephritis. Rest in bed and strict milk diet were not advisable in chronic cases.

Dr. J. **ROSE BRADFORD** (London) disagreed with the view that the amount of albumin lost was of no importance. As much albumin could be lost in a day as was contained in two pints of milk. He agreed, however, that the specific gravity was a better indication of the progress of the disease. A milk diet was advisable for chronic renal disease, but only in those cases which did not lose weight while taking it. Morphine was useful in certain cases, especially with dyspnœa, and it was inadvisable in cases with dropsy, but no definite rules could be laid down as to its use. He declared that there was no evidence to show that the kidney had any internal secretion. Venesection, followed by transfusion, was in some circumstances a valuable means of treating uræmia.

Dr. J. **BARR** (Liverpool) confirmed the remarks made by Professor Saundby as to the longevity of cases with chronic interstitial nephritis, and Dr. **DAVID NEWMAN** (Glasgow) described a method of venesection in nephritis.

SURGERY.

WEDNESDAY, JULY 27TH.

Introductory Remarks by the President.

Mr. H. P. **SYMONDS** presided and in opening the meeting made a few remarks on the subject proposed for discussion. He said that those who were only acquainted with modern surgery could not appreciate the condition of things before the introduction of antiseptic surgery. He himself had commenced the study of medicine in 1869 when, he might say, such a thing as primary union was never seen. He had also had the opportunity of seeing the result of wounds and operations in the Franco-Prussian war, when the mortality from amputations was exceedingly great and septic troubles of all kinds were the rule. All this had been changed by the methods of Lister. It was true that at first the technique was cumbersome and the details were many but there was one countervailing benefit; as the method was but little known the surgeon had to attend to all the details himself and thus were obtained the very excellent results which the new method gave at once. On one other point he wished to express an opinion; he thought that all surgical cases should, as far as possible, be treated in the open air; a method already employed in tuberculosis but applicable equally well to many other conditions. The most recent addition to the prevention of sepsis after operations was originally suggested by Mikulicz who advised the hypodermic injection of nuclein and other substances to set up a hyperleucocytosis, by which the resistance of the tissues was greatly increased. That surgeon was best fitted for the practice of surgery who had had a bacteriological training.

A discussion on *Asepsis and Antisepsis* was opened by Mr. F. F. **BURGHARD**, in the unavoidable absence of Mr. W. Watson Cheyne. He commenced by saying that all surgeons were agreed that a wound made by a surgeon into a non-septic part should be free from germs, that is, "aseptic," but the method by which this aseptic condition should be attained was the cause of much discussion but this difference of opinion could not apply to cases which were already septic when the surgeon operated. He continued: The standard by which the results of operations are judged is now very much higher than it was for some years after the introduction of the antiseptic method of Lister. Formerly a surgeon was satisfied with his results even though a little pus formed in a fair proportion of his cases but now even the slightest formation of pus is sufficient to condemn a wound as septic. Others say there should be no redness or swelling around a wound. Others are even more particular, for they insist on a wound and the surrounding parts proving sterile when examined by bacteriological culture tests. There are three channels by which infection can reach a wound. In the first place germs can enter a wound by the instruments employed. In the second place they can come from the skin of the patient or the hands of the surgeon or of his assistants. As a rule, true pathogenic bacteria do not reside in healthy skin; there are numerous germs present but they are usually harmless; still the skin is a fertile source of infection. The third channel by which micro-organisms can reach a wound is the air. Those who advocate what they call a pure "aseptic" surgery are inclined to minimise the dangers of infection by the air, but a very little experimentation with Petrie dishes exposed in the neighbourhood of an operation will show that many micro-organisms will settle during the time an operation is proceeding, it is true that most of these are non-pathogenic, but there is always the risk that pathogenic organisms may thus gain access to the wound and this danger should be guarded against. There are two methods by which micro-organisms can be destroyed—heat and antiseptics. Heat can be employed in three ways: first, by hot air, but this method needs expensive and troublesome apparatus and is therefore little used. Secondly, by boiling in water; this method is much employed but for thorough sterilisation boiling for half an hour is required and, though this is possible for instruments put out for an operation, it is not possible if an instrument is suddenly required in the middle of an operation. The third method is by superheated steam, but in Mr. Burghard's opinion this is suitable only for trays and basins. With regard to the skin, heat cannot be employed and therefore recourse must be had to the use of chemicals, and even those who sterilise the instruments and dressings by means of heat employ antiseptics for the skin. With regard to the tissues in a wound no one favours the employment of strong antiseptics, but the use of dilute antiseptics in a wound can do no harm. He employs heat to sterilise instruments as a rule, but when an instrument is required during an operation it is dipped for five minutes in liquefied carbolic acid and then it is placed like the other instruments in a 1 in 20 carbolic acid solution. The paper ended with various details as to the preparation of instruments, the disinfection of the skin, the use of sponges, the preparation of catgut, and towels.

Mr. C. A. **LEEDHAM-GREEN** (Birmingham), in continuation of the discussion, read a paper on the Sterilisation of the Hands, in which he described some experiments made to determine the relative value of various methods employed by which he had arrived at the following conclusions. That even after the most prolonged and energetic washing of the hands in soap and hot water it is not possible materially to diminish the number of microbes on them and that the form of soap employed causes no real difference; that, however prolonged the washing is, nothing is really gained; neither is there much value in using soft soap, turpentine, benzol, xylol, or aqueous solutions of carbolic acid, lysol, perchloride, or biniodide of mercury. Kelly's method of applying a saturated solution of permanganate of potash followed by a solution of oxalic acid gives wholly inadequate results Soaps containing biniodide of mercury or lysol are practically valueless for cleansing the hands Alcohol far surpasses all other agents for cleansing the hands but it should be employed for four or five minutes especially when in a 70 per cent solution It is essential that the hands should be smooth The best results were obtained by the following methods (*a*) the hands were first scrubbed for five minutes with soap and very hot water (about 50° C), (*b*) then rubbed with methylated spirit for three minutes , (*c*) then scrubbed for a minute or two with 70 per cent sublimate alcohol (1 in 1000), and (*d*) finally rubbed until dry and polished with a sterile cloth As no method of cleansing the hands guarantees sterility it is desirable that impermeable gloves should be worn when the nature of the operation will permit, whether the wound be aseptic or not

Mr H ,
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which infection was derived Some of the sources of danger might easily be provided against for heat was an absolutely efficient steriliser when it could be used , when it could not be used the less reliable method of chemical disinfection had to be adopted That chemical disinfection was unreliable could be shown by the fact that much commercial "sterilised" catgut will infect culture tubes Complete disinfection of the skin of the operator and of the patient was almost impossible, for even if the surface of the skin at the commencement of the operation was sterile, yet during the course of the operation micro organisms from the deeper layers of the epidermis worked to the surface Air infection could not be prevented, but one of the most important points in preventing infection through the air was to take care that the air was as still as possible, and that no dusting or sweeping was done before the operation No wound was absolutely aseptic for if the surface of a wound was tested by cultures immediately before it was closed infection would always be found to be present The tissues destroyed micro organisms to a certain extent and it was better to let them exercise this power than to employ strong antiseptics in the wound and thus reduce greatly the resistance of the tissues Finally, it was important to do as little damage as possible to the edges of the wound and to keep it as dry as possible

Mr H J **STILES** (Edinburgh) considered that the treatment of wounds depended not so much on the method *employed as on the care with which it was carried out* The preparation of th verdone He
prepared the skin then applied
a dry dressing, a immediately
before the operation As to the dressings for the wound he often used none but merely put on some iodoform from cumol He had employed this in 100 cases of hernia in children with excellent results When a wound was not to be disturbed for two or three weeks he thought it well to use an antiseptic dressing

Mr K W **MONSARRAT** (Liverpool) thought that a surgeon should always test his methods bacteriologically The method used for the patient's skin had to vary with the region operated on but an alcoholic solution of the biniodide was very useful He considered that gloves were essential for only by the use of gloves could a surgeon guarantee that his hand did not infect the wound After the operation it was well to wash out the wound with sterilised water

Mr G G **HAMILTON** (Liverpool) gave a list of a year's work Out of 154 operation cases only six did not heal by first intention He thought it desirable to do without assistants so far as possible

Mr J P **BUSH** (Bristol) said that he had given up Kelly's method of hand disinfection and had gone back to immersion of the hands in a solution of carbolic acid or perchloride of mercury Dressings were of very little importance

Professor **RODMAN** (Philadelphia) said that by no method was it possible to sterilise the hands except perhaps by the use of chlorinated lime and water followed by carbonate of sodium, but this was too severe for everyone except those with very thick skins It was best for the surgeon to wear rubber gloves Washing for five to ten minutes was of great value in cleansing the skin

Mr C W **CATHCART** (Edinburgh) thought it of great importance for those engaged in teaching to practise such a *method as could be followed out by their students His* house surgeon who assisted him wore gloves, but rarely put his hands into the wound

Sir **WILLIAM MACEWEN** (Glasgow) said that he practised aseptic surgery, but the skin was cleansed with soap and carbolic acid solution on two or three occasions The surgeon's hands were periodically tested bacteriologically, and he required that all his assistants should steep their
lution of carbolic acid

Mr H **DAVIES** (Greenwich), Mr J **WARD COUSINS** (Portsmouth) Mr A B **MITCHELL** (Belfast), Mr W A **MEREDITH** (London) Dr J **LAURIE**, and Dr W T **BROOK FOX** (Blyth)

Dr G H **EDINGTON** (Glasgow) read a paper on Median Cysts of the Neck It was based on several cases observed by him All these cysts were developed from the thyro glossal tract as first described by His He gave details of some of his cases and pointed out that these cysts might appear superficially to the deep fascia

PATHOLOGY

WEDNESDAY, JULY 27TH

The section met in the Pathological Department, University Museum *The President, Dr* **JAMES RITCHIE** (reader in pathology, University of Oxford), whose address was practically the opening contribution to the discussion on Immunity, briefly reviewed the present day theories on the subject, differentiating established facts, laying stress on the complexity of the problems needing elucidation, and indicating the trend of the most recent work

Dr W **BULLOCH** (London) followed with a paper on the Cellular Aspects of Immunity

Dr **GEORGES DREYER** (Copenhagen) and Dr A J **JEX-BLAKE** (Oxford) detailed their experiments on Agglutinins in Relation to Immunity, and Dr **MADSEN** (Copenhagen), in his paper on the Neutralisation of Lysins, pointed out the applications of the methods of physical chemistry to the elucidation of these biological reactions

Dr C J **MARTIN** (Lister Institute) and Dr **NOGOUCHI** dealt with Snake Venom in Relation to Immunity, the former discussing the broad general principles brought out by the study of this branch of the subject , the latter dealing with the specific results obtained by the therapeutic use of various antivenins

Dr M A **RUFFER** (Alexandria), in a paper on Hæmolytic and Hæmosozic Sera dealt with the preparation and *characters of these substances, after which the section* adjourned

On resuming, in the course of a discussion on Immunity, Professor **MUIR** (Glasgow) described his experiments on the Nature of Hæmolysis and was followed by Dr A E **WRIGHT** (London) on Opsinines and their Relation to Immunity in which he explained the nature and action of these substances

PSYCHOLOGICAL MEDICINE

WEDNESDAY, JULY 27TH

The meeting of the section was held in the Morphology Lecture Room of the University

The Presidential Address was delivered by Dr **CHARLES A MERCIER**, the subject of the address being Criminal Responsibility and Degeneracy A lengthy discussion followed the reading of this paper and among those who took part in it were Mr A **DOUGLAS COWBURN**, Dr T **CLAYE SHAW**, Dr G H **SAVAGE**, Dr **DAVID YELLOWLEES** Dr G F **BLANDFORD** Dr T B **HYSLOP** Mr **CONOLLY NORMAN** Dr **ROBERT JONES**, Dr **ERNEST W WHITE** and Dr G L **SHUTTLEWORTH** after which the **PRESIDENT** replied *Letters contributory to the subject matter of the* discussion were sent by Sir **HERBERT STEPHEN** and Mr **HAVELOCK ELLIS** which were, in the absence of the writers, read by the **SECRETARY**

A lantern and microscopical demonstration on degenerative lesions of the posterior columns of the cord in general paralysis with remarks on the point of origin of tabes dorsalis was given by Dr **DAVID ORR** and Dr R G **ROWS** The view was maintained that the local vulnerability of certain points in the posterior root fibres of the spinal cord was due to anatomical conditions of the nerve sheaths as demonstrated on the screen An explanation of the patho*genesis of tabes was then given, based on the facts of the* vulnerability referred to This concluded the proceedings of the first day

PHYSIOLOGY.

Wednesday, July 27th.

This section met in the Physiological Laboratory under the chairmanship of Professor Francis Gotch. Dr. E. I. Spriggs gave an account of the work done by Dr. A. P. Beddard and by himself in connexion with the Metabolism of Diabetes, Professor W. H. Thompson and Dr. Ramsden joining in the discussion which followed.

Dr. W. L. Braddon described and exhibited Structures in Red Blood Corpuscles Stained by Alkaline Solutions of Methylene Blue when the blood film had not been previously dried.

Dr. R. Kennedy communicated his views and further observations on the Histological Changes occurring in Ununited Divided Nerves, his remarks giving rise to an interesting discussion by Professor Gotch, Professor Wesley Mills, Dr. W. B. Warrington, and Professor Thompson.

Dr. Warrington and Dr. F. Griffith gave an account of their work upon the Varieties of the Cells of the Spinal Ganglia and their Relationship to Axons of Different Distribution.

Dr. H. M. Vernon read a paper on the Protective Value of Proteids and their Decomposition Products on Trypsin exposed to Dilute Alkaline Solutions.

ANATOMY.

Wednesday, July 27th.

This Section met in the Lecture Theatre of the Department of Human Anatomy, Professor A. Thomson, the President, being in the chair. Dr. C. J. Patten communicated a paper on a New Method of Mounting Anatomical Preparations for Museum Purposes. Dr. G. H. Bryce read a paper on the Origin of Embryonic Leucocytes and Professor Robinson and Professor F. Keibel joined in the discussion. The rest of the sitting was devoted to a discussion on Giants and Dwarfs which, after being opened by Professor D. J. Cunningham, was continued by Professor B. C. A. Windle, Mr. Hastings Gilford, Professor A. Dixon, Dr. Peter Thompson, Dr. G. A. Gibson, Dr. Gladstone, Dr. Patten, Dr. Gustav Mann, and Professor Symington.

OPHTHALMOLOGY.

Wednesday, July 27th.

The sections met in Keble College under the presidency of Mr. R. W. Doyne (Oxford), who offered a special welcome to the many visitors from America, France, and Germany who proposed to join in the work of the section.

A discussion on Retro-bulbar Neuritis was opened by Mr. R. Marcus Gunn (London), who was followed by Mr. G. A. Berry (Edinburgh), Professor Uhthoff (Breslau), Mr. C. Higgens (London), Mr. F. Richardson Cross (Bristol), Professor Oliver (Philadelphia), Dr. A. H. Griffith (Manchester), Mr. E. Nettleship (London), and Dr. Miller. Mr. Gunn replied.

An interesting paper was read by Professor Poulton, F.R.S., on Conclusions as to Vision of Birds based upon a Consideration of Mimetic Colour and Pattern in Insects. A paper on the Maturation and Extraction of Senile Cataract was read by Mr. M. M. McHardy (London) and discussed by Mr. Higgens, Dr. Griffiths, Dr. J. Tatham Thompson (Cardiff), Dr. K. A. Grossmann (Liverpool), and Dr. F. A. Thomas (Swansea).

Dr. Grossmann read a paper on Cases of Astigmatism with Variable Axes, which was discussed by Mr. Berry and Professor Bull (Paris), and after a reply from Dr. Grossmann the section adjourned.

On resuming several demonstrations of specimens, drawings, and instruments were given in the special museum of the society.

DERMATOLOGY.

Wednesday, July 27th.

This section was presided over by Dr. T. Colcott Fox.

Dr. A. Douglas Heath read a paper on Acne Keloid and demonstrated the case. Dr. Fox, Dr. H. A. G. Brooke, Dr. Gilchrist (Baltimore), and Dr. J. M. H. MacLeod joined in the discussion.

Dr. W. T. Freeman showed a case of Leucokeratosis Buccalis and a case of Congenital Pemphigus, and Dr. H. Radcliffe Crocker, Dr. Gilchrist, Mr. G. Pernet, and Dr. F. Leslie Phillips spoke in the subsequent discussion.

Mr. Malcolm Morris opened a discussion on Pruritis Ani, and Dr. Fox, Dr. Crocker, Miss E. L. Walker Dunbar, Dr. Freeman, Dr. M. B. Hartzell, Dr. Norman Walker, Mr. Pernet, Dr. Harrison, and Dr. Gilchrist spoke.

Dr. Hartzell read a paper on Benign Cystic Epithelioma, and Dr. Brooke and Dr. Gilchrist discussed the paper.

Mr. Pernet read a paper on Bacillus Pyocyaneus and Pemphigus Vegetans.

LARYNGOLOGY AND OTOLOGY.

Wednesday, July 27th.

This section met in the class room in the museum under the presidency of Mr. J. Charters Symonds (London), who, after welcoming the visitors, gave a brief address.

A discussion on

The Treatment of Non-Suppurative Disease of the Middle Ear

was opened by Dr. Urban Pritchard (London) and Dr. Thomas Barr (Glasgow.)

The discussion was continued by Dr. Adolph Bronner (Bradford), Dr. Marcel Natier (Paris), Dr. J. Walker Downie (Glasgow), Mr. F. Marsh (Birmingham), Dr. William Milligan (Manchester), Dr. L. H. Pegler (London), Dr. B. H. Scanes Spicer (London), Dr. H. Smurthwaite (Newcastle), Mr. E. Waggett (London), Dr. Cecil E. Shaw (Belfast), Mr. C. H. Fagge (London), Mr. W. Hill (London), Dr. A. J. Brady (Sydney, N.S.W.), Dr. J. E. Neucomb (New York), and Dr. W. Jobson Horne (London).—The President summed up the discussion and the openers replied.

The translation of a paper contributed by Professor Ouodi of Budapest on the Disturbances of Vision and Development of Blindness of Nasal Origin induced by Diseases of the Posterior Accessory Sinuses was read by Dr. Horne.

TROPICAL DISEASES.

Wednesday, July 27th.

The President, Dr. Alexander Crombie delivered an introductory address entitled

"*The Fallacy of Finality*,"

in which he pointed out that a large proportion of the febrile attacks of hot climates must still be included in the term "febricula" and "simple continued fevers," and that the evidence that they were medical was inadmissible.

Colonel David Bruce, R.A.M.C., opened a discussion on "Trypanosomiasis" in which he contended that the trypanosoma Gambiense was undoubtedly the cause of trypanosomal fever and of sleeping sickness, and that the glossina palpalis was the carrier of the disease. The discussion was continued by Dr. D. N. Nabarro, Dr. C. Christy, Sir Patrick Manson, and Dr. Louis Sambon.

A paper on Trypanosomiasis and its Relations to Congo Sleeping Sickness (second progress report of the Liverpool School of Tropical Medicine Expedition to the Congo in 1903) was communicated by Dr. Christy, Dr. J. E. Dutton, and Dr. J. Todd.

A paper entitled "A New Trematode of Man" (Amphistoneum Watsoni) was communicated by Mr. H. F. Conyngham, demonstrator at the London School of Tropical Medicine.

"The Treatment of Snake Bites" was the title of a paper sent by Captain Leonard Rogers, I.M.S., acting professor of pathology, Medical College, Calcutta.

Mr. Ernest E. Austen, Zoological Department, British Museum, communicated Supplementary Notes on the Tsetse Flies (Genus Glossina, Wiedemann).

Papers on Floor Maggots met with in Houses on the Congo and on Cerebro-spinal Fluid in Sleeping Sickness (Trypanosomiasis) were communicated by Dr. Christy.

Dr. E. Anderson of Paris and Mr. T. J. Tonkin, joined in the discussion.

NAVY, ARMY, AND AMBULANCE.

Wednesday, July 27th.

Surgeon-General A. Frederick Bradshaw (the President), in a short introductory address, indicated the direction of the labours of the section.

Major E. C. Freeman, R.A.M.C., then read a paper on the Sanitation of Camps and this was followed by a communication on Sanitation in Volunteer Camps, contributed by Surgeon-Lieutenant-Colonel P. B. GILES, A.M.R. A paper by Staff-Surgeon J. FALCONER HALL, R.N., on the Present Dietary on Board a Man-of-War, was read and in the debate which followed the question of sanitation in connexion with the papers contributed was discussed.

A report by Major J. F. DONEGAN, R.A.M.C., on the Duties of a Medical Officer with a Regimental Unit in the Field was read; also a paper by Lieutenant-Colonel A. M. DAVIES, R.A.M.C., on the Sterilisation of Infective Discharges and Utensils on Field Service.

A paper on the Recruiting Problem, by Surgeon-Major W. C. BEEVOR, followed, and was fully discussed by Deputy-Inspector-General T. J. PRESTON, R.N., Surgeon-Major G. A. HUTTON, Fleet-Surgeon J. LLOYD THOMAS, R.N., and Major R. C. LEVER, R.A.M.C.

DENTAL SURGERY.

WEDNESDAY, JULY 27TH.

The meeting of this section was held in the Pharmacological Department under the presidency of Mr. E. A. BEVERS. The PRESIDENT read a short address. A discussion took place on Oral Sepsis, the subject being introduced by the following papers: Oral Sepsis as Related to General Surgery, by Mr. RICKMAN J. GODLEE; Oral Sepsis in its Relation to General Medicine, by Dr. W. HUNTER; the Pathology of Oral Sepsis, by Mr. KENNETH W. GOADBY. The following took part in the discussion: Dr. DALTON, Dr. STCLAIR THOMPSON, Dr. H. TILLEY, Professor J. ARKÖRY (Budapest), Mr. NORMAN BENNETT, Mr. J. G. TURNER, Mr. HERN, and Mr. E. LLOYD-WILLIAMS.

THE ANNUAL EXHIBITION.

OXFORD has provided excellent facilities for the exhibition of foods, drugs, and appliances of interest to the medical profession. The beautiful university city was sure to draw a large attendance and this fact was not lost sight of by intending exhibitors. As a result the exhibition was on a larger scale than in previous years and the number of visitors who attended must have been gratifying to all concerned. The accommodation placed at the disposal of the exhibitors was ample and every opportunity was offered for making the display attractive in the spacious and beautiful rooms situated on the first floor of the Examination Schools in the High-street. In the same picturesque building were the reception-room and the room in which the general meetings were held, so that the fact of an exhibition taking place could hardly escape the visitor, even though he were bent merely upon the discussion of the affairs of the Association or interested mainly in the social side of the meeting.

In regard to the exhibits, there was a noticeable falling off in one class while there was a decided increase in another. The sections more fully illustrated than before perhaps were those which we have hitherto included under the headings of "surgical instruments" and "sanitary and hospital appliances." Special foods were represented on much the same scale as in previous years but drugs, synthetic remedies and new methods of administration were not so prominent a feature. There were, however, many excellent displays typifying pharmaceutical elegance and skill. Electro-therapeutic apparatus attracted a good deal of interest and there was also a fair representation of scientific apparatus. Whilst adhering mainly to the classification adopted in former years we may depart from it by placing the sections in a slightly different order, giving those precedence which appeared to be more in evidence than has hitherto been the case. We propose therefore to deal with the sections in the following order. (1) Drugs; (2) Surgical Instruments and Appliances; (3) Sanitary Appliances, Disinfectants, &c.; (4) Foods and Food Products; (5) Mineral Waters, Beverages, &c.; (6) Publications; and (7) Miscellaneous.

I.—DRUGS.

Considerable attention has been paid to the preparation of suprarenal extracts, almost every manufacturing pharmaceutical chemist exhibiting special specimens of this powerful hæmostatic. In particular, Messrs. Parke, Davis, and Co., of 111, Queen Victoria-street, London, E.C., showed specimens of the hæmostatic principle in the form of adrenalin chloride, one part of which in 10,000 parts of water is stated to blanch the conjunctiva in from 30 to 60 seconds. The difficulty of making aqueous solutions has been overcome by the use of the chloride. A recent application of adrenalin chloride applied in the form of spray is its use in hay fever. We have already mentioned in our analytical columns acetozone, or benzoyl-acetyl-peroxide, which proves to be a powerful germicide, equal in this respect to 1 per 1000 mercuric chloride solution, whilst it may be administered internally without harm. Amongst other products on this stall we noticed digitalin, which is described as an aseptic, non-alcoholic, non-irritating, permanent solution of digitalis standardised physiologically. The exhibit also included a series of lantern-slides illustrating the preparation of serum, the physiological testing of drugs, and a series of charts illustrating the effect of adrenalin and digitalin on heart and blood pressure. The Bayer Company, Limited, of 19, St. Dunstan's-hill, London, E.C., showed some of their fine specimens of pharmaceutical products. Amongst these may be mentioned aristol, an iodine thymol derivative, described as a "cicatrisant" for burns, ulcers, and purulent discharges; citarin which has been used in the treatment of gout and as an analgesic in cases of rheumatism; helmitol, a new urinary antiseptic liberating formaldehyde both in alkaline and acid urines; mesotan, a derivative of salicylic acid and a substitute for winter green oil but without, it is said, the disagreeable properties of the latter; and lastly, veronal or malonyl urea, a new hypnotic which is said to induce sleep without harmful effects. One of the best examples of pharmaceutical display was that of Messrs. Brady and Martin, Limited, of Newcastle-upon-Tyne. Their preparations included ergotinol, a standard preparation of ergot which has been used with consistent results in gynæcological practice; capsules of ammoniated quinine, Easton's syrup, and several excellent liquors. Messrs. A. and M. Zimmerman of 3, Lloyd's-avenue, London, E.C., exhibited some interesting synthetics, amongst which may be mentioned exodin (Schering), a tasteless and odourless aperient causing no disturbance to the stomach; urotropine, a urinary antiseptic; beta-eucaine, which is chemically identical with cocaine but possessing advantages compared with that alkaloid in anæsthetic practice. This exhibit included sublamin, a powerful bactericide useful in particular for disinfecting the skin and mucous membrane. There were also other preparations illustrating "Schering's modern therapeutics." The stall of Mr. Frank A. Rogers of 327, Oxford-street, London, W., was chiefly occupied by a very complete set of medical sprays and atomisers simple in design and effective. The exhibit included also some pharmaceutical preparations and hypodermules of suprarenal gland solution. The Ferroleum Company, Limited, of 86, Clerkenwell-road, London, E.C., exhibited their specialty ferroleum, which is based on an excellent formula, including cod-liver oil, phosphate of iron, phosphorus, and glycerine. The point about the preparation is that the ingredients are completely emulsified. Purgen was the chief exhibit of Messrs. H. and T. Kirby and Co., Limited, of 14, Newman-street, London, W. Purgen is described as a non-irritating but effective aperient. It is said to have a constitution allied to the purgative principle of well-known vegetable extracts. The exhibit included some useful compressed tablets of drugs. Messrs. Andrus and Andrus of 46, Holborn Viaduct, London, E.C., drew the attention of the visitors to "hemaboloids" described as "a rational blood enricher and tissue reconstructive." Its claims as a real and effectual hematinic are based upon the fact that it contains iron as it exists in organic combination in vegetable food stuffs. It is further prepared with bone-marrow extract, beef peptone, and nuclein. Clinical observations are given which record the increase in the percentage of hæmoglobin of the blood after the administration of *hæmoboloids. Beside this preparation* were specimens of formolyptol, a pleasant, non-irritating, and non-poisonous bactericide. We have already pointed out the advantages of "antiphlogistine" which is in reality a scientific cataplasm in [illegible] in an affected or disc [illegible] soothing whilst antiseptic [illegible] results in inflammatory [illegible] shown by the Denver Ch [illegible] 110, Cheapside, London, E.C. [illegible] parations for which originality may be claimed were artistically displayed on the stall of Messrs. C. J. Hewlett and Son, of 35 to 42, Charlotte-street, London, E.C. Amongst *absentiâ*); and John Campbell Young, *B.Sc.*, Australia, M.B., C.M., 1884 (*in absentiâ*).

* Commended for their theses.
† Highly commended for their theses.
‡ Awarded gold medal for their theses.

Bachelor of Medicine and Master in Surgery.—Hugh Craigie Gibson, Scotland; and George Munro, England.

Bachelor of Medicine and Bachelor of Surgery.—Russell Gerald William Adams, New Zealand; David Irving Anderson, England; William Ward Anderson, England; James William Herbert Babington, Ireland; §Robert Balfour Barnetson, Scotland; William Purvis Beattie, Scotland; Douglas Bell, England; Lewis Hay Irving Bell, Scotland; James Bentley, Ireland; Alexander Robert Berrie, India; John Marthinus Beyers, Cape Colony; Arnold Samuel Longbotham Biggart, England; Dudley William Boswell, England; Frederick Thompson Bowerbank, England; §David Brown, Scotland; William Sanders Murdoch Brown, Scotland; §Hugh Clive Buckley, India; Vincent Theodore Carruthers, England; Mildred Margaret Lindsay Cathels, Scotland; §Robert Alexander Chambers, Ireland; Duncan Macdonald Cochrane Church, Scotland; George Stewart Clark, M.A., B.Sc., Scotland; Alexander Glover Coullie, Scotland; Thomas Edmund Coulson, England; George Cunningham, M.A., Scotland; John Michael Dewar, Scotland; Robert Donaldson, M.A., Scotland; §Arthur Mitchell Dryden, Scotland; Thomas Henry Easton, Scotland; Charles Gordon Edmonston, Scotland; Edward John Elliot, Scotland; Nicolai Christian Fischer, Scotland; §Jules Michael Ralph Flament, Trinidad; William Henry Forsyth, England; §Louis Fourié, Cape Colony; Alastair Norman Fraser, Scotland; ‖William James Fraser, Scotland; Frederick Henry Gibson, [illegible] Glass, M.A., Scotland; Alfred Marshall [illegible] Vivian Goldstein, England; Jean Pa[illegible], James Methuen Graham, Scotland; William Wells Greer, Australia; Evan John Griffiths, Wales; Thomas Mansfield Guthrie, Scotland; Philip Anthony Harry, Jamaica; ‖Ephraim Henderson, M.A., Scotland; Alexander Wilson Hogg, New Zealand; George Staunton Husband, Jamaica; Knollys Ulric Alexander Inniss, Trinidad; John Jardine, Scotland; Samuel Alexander Johnston, Ireland; John Kirk, Scotland; George Francis Stirling Landon, England; Samuel Walter Sydney Leary, Ireland; Arthur James Lewis, England; ‖James Lochhead, M.A., B.Sc., Scotland; Charles Damien Lochrane, Scotland; James Blacklay Lockerbie, Scotland; Isabella Logie, Scotland; Archibald Duncan McCallum, England; Hugh McCalman, M.A., Scotland; William McConaghy, Ireland; ‖John Pool McGowan, M.A., Scotland; §Hugh Ross Macintyre, Scotland; Norman Douglas Mackay, B.Sc., Scotland; Robert John Mackessack, M.A., Scotland; Amy Marion Mackintosh, Scotland; Elspeth Mary Macmillan, Scotland; Alexander MacRea, M.A., Scotland; Alfred Malseed, Ireland; Murat Marcus Mamourian, Smyrna; David Pieter Marais, South Africa; Aimée Eveline Mills, M.A., B.Sc., New Zealand; Lindsay Stephen Milne, Scotland; Gerald Irving Moriarty, Ireland; Thomas Bernard Mouat, Scotland; William Maxwell Muney, England; Donald Sutherland Murray, Scotland; Archibald Oliver, Scotland; Charles Duncan O'Neal, Barbados; Armand Pampellonne, Trinidad; William John Patterson, Ireland; William Patton, Ireland; Bernand Pickering, England; Florence Margaret Sarah Price, Wales; Labbhu Ram, India; Charles Reece, New Zealand; Alfred Ernest Carey Rees, B.A., England; Hugh Smith Reid, Scotland; Charles Henry George Ritter, Cape Colony; Margaret Helen Robertson, Scotland; William James Dunlop Robertson, Scotland; Joseph Robinson, B.Sc., England; Sheila Margaret Ross, Scotland; Charles Sydney Ryles, England; John Saffley, Scotland; John Glendinning Bryden Shand, Scotland; John Ingram Shepherd, M.A., Scotland; Frederick Ritchie Sinton, Scotland; Charles Johnston Smith, Scotland; George M'Call Smith, Scotland; William Arthur Wilson Smith, Scotland; Patrick Steele, Scotland; Francis Hugh Stewart, M.A., B.Sc., Scotland; Hugh Angus Stewart, Scotland; §Arthur Charles Strain, Scotland; Kenneth Andrew Moody Stuart, Scotland; Stuart Hopcraft Stanley Taylor, B.A., England; Herbert Marshall Thompson, England; Robert Stanley Enever Todd, M.A., B.Sc., Scotland; George Herbert Ussher, New Zealand; Robert Milne Walker, Scotland; Robert William Lessel Wallace, Scotland; Robert Honey Watt, Scotland; John Henry Douglas Webster, Scotland; David Percival Dalbreck Wilkie, Scotland; Friedrich Adolf Wille, Cape Colony; William Bruce Wishart, Scotland; Alfred Chad Turner Woodward, England; Cyril Haworth Wright, B.A., England; Thomas Wright, Ireland; and Margaret Campbell Wylde Young, M.A., Scotland.

§ Passed with second-class honours.
‖ Passed with first-class honours.

Special University Certificate in Diseases of Tropical Climates.—David Irving Anderson, M.B., Ch. B.; James William Herbert Babington, M.B., Ch. B.; Robert Balfour Barnetson, M.B., Ch. B.; John Evans Hadden Bennett, M.B., C.M.; Alexander Robert Berrie, M.B., Ch. B.; Dudley William Boswell, M.B., Ch. B.; Mildred Margaret Lindsay Cathels, M.B., Ch.B.; Robert Alexander Chambers, M.B., Ch. B.; George Stewart Clark, M.A., B.Sc., M.B. Ch. B.; Robert Donaldson, M.A., M.B., Ch.B.; Arthur Mitchell Dryden, M.B., Ch.B.,; Thomas Henry Easton, M.B., Ch.B.; Edward John Elliot, M.B., Ch.B.; Jules Michael Ralph Flament, M.B., Ch.B.; William Henry Forsyth, M.B., Ch.B.; Alastair Norman Fraser, M.B., Ch.B.; William James Fraser, M.B., Ch.B.; Jean Paton Gordon, M.B., Ch.B.; James Methuen Graham, M.B., Ch.B.; Philip Anthony Harry, M.B., Ch.B.; Ephraim Henderson, M.A., M.B., Ch.B.; Knollys Ulric Alexander Inniss, M.B., Ch.B.; James Lochhead, M.A., B.Sc., M.B., Ch.B.; William M'Conaghy, M.B., Ch.B.; John Pool M'Gowan, M.A., M.B., Ch.B.; Hugh Ross Macintyre, M.B., Ch.B.; Amy Marion Mackintosh, M.B., Ch.B.; Daniel Mackinnon, M.B., Ch.B.; Elspeth [illegible] Ch.B.; James Gibson M'Naught, M.A., [illegible] Stephen Milne, M.B., Ch.B.; William [illegible] Ch B.; Labbhu Ram, M.B., Ch.B.; Alfred Ernest Carey Rees, B.A., M.B., Ch.B.; Margaret Helen Robertson, M.B., Ch.B.; William James Dunlop Robertson, M.B., Ch.B.; Joseph Robinson, B.Sc., M.B., Ch.B.; Sheila Margaret Ross, M.B., Ch.B.; Francis Hugh Stewart, M.A., B.Sc., M.B., Ch.B.; Arthur Charles Strain, M.B., Ch.B.; Robert Stanley Enever Todd, M.A., B.Sc., M.B., Ch.B.; and John Henry Douglas Webster, M.B., Ch.B.

UNIVERSITY OF ABERDEEN.—The following degrees and diploma have been conferred:—

Degree of Doctor of Medicine (M.D.).—Middleton Connon, M.B., C.M., *Montrose (under old regulations); James Cran, M.B., C.M.*, Belize, British Honduras (under old regulations); Ernest King Gawn, M.B., C.M., London (under old regulations); Henry Gibbons, M.B., C.M., Market Harborough (under old regulations); Peter Harper, M.A., M.B., C.M., London (under old regulations); *David Albert Hutcheson, M.B., Ch.B., Aberdeen; †Arthur Hugh Lister, B.A., M.B., C.M., Aberdeen (under old regulations); ‡Hugh MacLean, M.B., Ch.B., Aberdeen; John Smith Purdy, M.B., C.M., Morpeth [illegible] *Arthur Westerman, M.B., Ch.B., London; [illegible] on, M.B., C.M., Aberdeen.

* [illegible] r thesis. † Honours for thesis.
‡ Highest honours for thesis.

Degree of Bachelor of Medicine (M.B.) and Bachelor of Surgery (Ch.B.).—§Cyril Moore Smith, Cheshunt, Herts (with second-class *honours*); *Catherine Emslie Anderson* and John Anderson, Aberdeen; Wm. Robert Catto, Aberdeenshire; William Gillespie Bryson Gunn, Cullen, Banffshire; Alexander Hendry, Ellon, Aberdeenshire; Thomas Christie Innes, Skene, Aberdeenshire; Henry Williams Jeans, Portsmouth; John Jenkins, M.A., Burghead; Frederick Leonard Keith, Helen M'Glashan, and Roderick Mackay, M.A., Aberdeen; James Reid, M.A., Dublin; Michael Balfour Hutchison Ritchie, Inverurie; Fife Slater, Hopeman, Morayshire; James Hutcheon Thomson, Turriff; and Robert James Barron Wright, Forgue by Huntly.

§ Passed final examination "with distinction."

Diploma in Public Health.—Hugh Johnston, M.B., Ch.B. Aberd., Auchnagatt; and William Mackie, M.A., M.B., C.M. Aberd., Elgin.

CONJOINT EXAMINATIONS IN IRELAND BY THE ROYAL COLLEGE OF PHYSICIANS AND ROYAL COLLEGE OF SURGEONS.—The following candidates have passed the third examination as undernoted:—

Passed in all Subjects.—T. A. Burke, M. Cohen, E. G. Condon, P. F. Foran, W. Glennon, C. W. Greene, W. P. Kelly, T. H. Massey, M. O'Connor, J. R. Tobin, and C. H. Wilson.

Completed Examination.—R. Calnan, C. J. R. Clarke, S. C. Clarke, T. W. Conway, J. Corboy, J. B. Dwyer, T. J. Golding, P. E. Hayden, R. F. Hayes, H. Hosty, A. E. S. Irvine, L. F. Kelly, M. J. C. Kennedy, F. G. McCaughey, T. J. Madden, R. V. Murphy, J. O'Donnell, W. D. Sammon, P. D. Sullivan, and W. G. Wright.

First Examination in all Subjects.—P. J. Timoney.

THE CENTRAL MIDWIVES BOARD.—The members of the Central Midwives Board met on July 21st at 6, Suffolk-street, London, S.W., Dr. F. H. Champneys being in the chair. A letter was read from the Registrar-General as to death certificates of midwives. It appears that it is the duty of the various local authorities mentioned in the Midwives Act to report to the Central Midwives Board the deaths of midwives. It was decided that Mr. J. Heywood Johnstone, M.P., one of the members of the Board, should be asked to bring the matter before the Association of County Councils. A letter from the town clerk of Brighton inclosing a report by the medical officer of health of Brighton on the working of the Midwives Act was then read and the Board decided to ask the town clerk of Brighton to forward a report on the matter for its consideration. The following is the scheme of examinations which will come up for final consideration in the autumn:—

Examiners.—1. A list of examiners, both for London and the provinces, shall be prepared by the Central Midwives Board from those who are willing to serve and act when required by the Board. This list shall be subject to annual revision by the Board. Before such a list is formed application for the post of examiner shall be invited by advertisement [illegible] shall be partly oral and practical and [illegible] conducted by not fewer than two examiners [illegible] mine his own pupils. 4. The first examination shall be held in May, 1905. 5. Thereafter the examination shall be held four times a year, or oftener if necessary, in London and the provinces simultaneously on the same papers. The Board reserves to itself the right to appoint one or more qualified medical practitioners as visitors of the examinations, both London and provincial, when it appears desirable. 6. The first provincial centres shall be: (*a*) Bristol; (*b*) Manchester; [illegible] Tyne. 7. A paper of directions to examiners [illegible] issued to each examiner on his appointment. [illegible] an examiner shall be at the rate of 7*s*. for each candidate examined.

London examiners.—1. The examiners, both London and provincial, shall be invited to meet at the offices of the Central Midwives Board as often as may be necessary. 2. The ar[illegible] shall be made by the secretary of t[illegible] such extra assistance as may be necess[illegible] examiners shall be: (*a*) To consider [illegible] by provincial examiners. (*b*) To set all the papers of examination questions both for London and the provinces. Two of the examiners, with the assistance of one of the medical members of the Board to be appointed for the purpose, shall undertake this duty in rotation. The remuneration of the examiners shall be two guineas each. (*c*) To conduct the examination, written and oral, of all candidates presenting themselves for examination in London. (*d*) To report to the Central Midwives Board the result of each examination held in London.

Provincial examiners.—1. The examiners appointed by the Central Midwives Board to conduct the Board's examinations in a provincial centre shall assist the secretary of the Board in making the necessary arrangements for the examinations. 2. One of the examiners shall be responsible for reporting the result of each examination to the Central Midwives Board.

Directions to examiners.—1. The paper shall consist of not fewer than six questions and the time allowed for answering shall be three hours. 2. Notes should be taken either by the examiner himself or by a colleague of the subjects upon which the candidate is questioned in the oral examination. 3. 15 minutes should be considered an average period for the oral examination of each candidate. 4. Examiners should avoid questioning candidates as to where and by whom they were trained so as to avoid any suspicion of bias.

THE LATE DR. GEORGE CHARLES WIGAN OF PORTISHEAD.—A beautiful stained-glass window of three lights in memory of the late Dr. G. C. Wigan and Mrs. Wigan has been placed in Portishead (Somerset) parish church and was dedicated by the rector on July 16th.

ROYAL COLLEGE OF SURGEONS IN IRELAND: FELLOWSHIP EXAMINATION.—Mr. C. W. H. Fleming, L.M. and S. Dublin University, having passed the necessary examination has been admitted a Fellow of the College. Miss S. H. Commissariat, L.M. and S. Bombay University, has passed the primary part of the Fellowship examination.

DONATIONS AND BEQUESTS.—Mr. John Hunter, the President of the Exmouth Cottage Hospital, has given £500 towards the funds of that institution.—Mr. A. Barlow of Southampton has given a donation of £3500 to the Royal South Hants and Southampton Hospital. Within the last few years Mr. Barlow has given £10,000 to this institution.

PRESENTATION TO A MEDICAL PRACTITIONER.—At the Oxford-street Schoolroom, Totterdown, on July 22nd, the members of the Totterdown (Bristol) and District Branch of the City and Marine Ambulance Corps presented Mr. J. J. Scammell Lucas, B.A. Lond., L.R.C.P. Lond., M.R.C.S. Eng., with a silver cigarette case, suitably engraved, as a mark of appreciation of his services as honorary instructor.

LONDON SCHOOL OF TROPICAL MEDICINE.—The following students who attended the school during the session from May to July, 1904, have passed the examination at the end of the course with distinction: J. Currie (Colonial Service), A. King (Colonial Service), E. Maples (Colonial Service), P. N. Gerrard (Colonial Service), and C. A. Suvoong.

WESTERN OPHTHALMIC HOSPITAL, MARYLEBONE-ROAD, W.—A new out-patient department has been built at this institution at a cost of £3800. This was opened recently by the Marquis of Ripon, K.G., the President, who was supported on the platform by Mr. Diggle, J.P., the chairman of the committee, Sir Reginald Hanson, Bart., the treasurer, and Sir Anderson Critchett. This department, which is now brought up to date and fitted up in the most improved style, will greatly facilitate the work connected with the out-patients who have so largely increased during the last few years. The committee hopes before long to be in a position to rebuild the in-patients' department and so to make the hospital complete in every way.

LITERARY INTELLIGENCE.—The seventh edition of Dr. Frederick Taylor's "Practice of Medicine" will be published immediately. The work has been subjected to a very thorough revision since the last edition and considerable alterations and additions have been made, especially in the sections on influenza, malaria, dysentery, the examination of the nervous system, spinal sclerosis, myoclonus, the treatment of phthisis, arterial degenerations, gastric disorders, diseases of the pancreas and of the blood, Glénard's disease, nephritis and diabetes. Other subjects are now introduced for the first time into the book which will be issued by Messrs. J. and A. Churchill. The same publishers also announce a new book by Dr. Thomas Carruthers entitled "Urine Examination made Easy, a Method of examining Urine with the Common Tests fully Described"; and a work "On the Development and Anatomy [illegible] with an Account of its [illegible] rgical Treatment," by Mr. [illegible] This is the successful Heath scholarship prize essay.

COMPLIMENTARY DINNER TO A MEDICAL PRACTITIONER.—A complimentary dinner was given on July 19th at Bedford to Dr. George P. Goldsmith by the medical men of Bedford and its neighbourhood in order to express to him their esteem and goodwill on his retirement from practice in Bedford after more than 40 years' service and on his departure from the town. 20 medical men sat down to dinner while nearly 20 regretted their enforced absence and joined in the general expression of esteem. Dr. Rowland H. Coombs occupied the chair. The menu was interspersed with some striking Latin epigrams. Dr. Goldsmith went to Bedford as a young man and has seen great changes in the town. He gave his services to the hospital for more than 30 years, when he was made consulting physician, and was first president of the Bedford Medical Society. For some years he represented the archdeaconry at the Diocesan Conference and he was a member of the elementary school board throughout its existence, and subsequently a co-opted member of the school committee. It is also intended to present Dr. Goldsmith with a Greek Testament, a Hebrew lexicon, and other works which will be valuable to him.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Alcohol for Industrial Purposes.

IN the debate on the Finance Bill the Chancellor of the Exchequer said that he had seen enough to convince him that the possible use of alcohol in manufactures had increased very considerably in recent years and that much development would follow. He was anxious to remove obstacles to enterprise in this country and he had decided to appoint a departmental committee to inquire into the whole subject.

HOUSE OF COMMONS.

THURSDAY, JULY 21ST.

Alcohol for Industrial Purposes.

[illegible] through the Foreign Office information as regards the terms upon which alcohol may be used for industrial purposes in the principal countries of [illegible] America and, so far as it can [illegible] duty is charged upon alcohol [illegible] It is, however, [illegible] would [illegible] s not a [illegible] fferent [illegible] these [illegible]

German Sanatorium Syndicate.

[illegible] water.

Accommodation for Sick Poor.

Mr. HERBERT SAMUEL asked the President of the Local Government Board whether the Board regarded as adequate the accommodation provided for the sick in the Eastville workhouse, belonging to the Bristol board of guardians, how many members of that board of guardians on a recent occasion voted for and how many against the provision of better accommodation; and whether he proposed to take any further action in this matter.—Mr LONG said: The accommoda- [illegible]

Vivisection.

[illegible]

Suspended Animation.

[illegible] only report which I have as yet received is a copy of a paper by Professor Schäfer entitled "Description of a Simple and Efficient

OLVER, THOMAS, L.R.C.P. Lond., M.R.C.S., has been appointed to the Medical Charge of the Troops at Crownhill, South Devon.

ORCHARD, ALBERT JOHN, M.B., Ch.M. Edin., has been appointed Public Vaccinator for Christchurch, New Zealand.

PAYNE, J. W., M.R.C.S., L.S.A., has been appointed Port Officer of Health for Devonport, Tasmania.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

AYR DISTRICT ASYLUM.—Junior Medical Officer, unmarried. Salary £120, with board, apartments, attendance, and washing.

BRIGHTON THROAT AND EAR HOSPITAL, Church-street, Queen's-road.—Non-Resident House Surgeon for six months, renewable. Salary at rate of £75 per annum.

BRISTOL ROYAL INFIRMARY.—Resident Junior House Surgeon and Anæsthetist. Also Resident Casualty Officer. Salaries at rate of £50 per annum, with, board, lodging, and washing.

COVENTRY AND WARWICKSHIRE HOSPITAL.—Assistant House Surgeon. Salary £60 per annum, with rooms, board, washing, and attendance.

DARENTH ASYLUM, Dartford, Kent.—Two Resident Medical Officers (Locum Tenens). Salary £4 4*s*. per week.

DEVONPORT ROYAL ALBERT HOSPITAL.—Assistant House Surgeon for six months. Salary at rate of £50 per annum, with board, lodging, and washing.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, London, W.C.—House Physician, also House Surgeon, both for six months, and unmarried. Salary in each case £20, with board and residence.

HUMBERSTONE ASYLUM, Leicester.—Assistant Medical Officer. Salary £200 per annum, with furnished quarters and board.

INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE DISPENSARY.—Junior House Surgeon. Salary £75 per annum, with residence, board, and washing.

KENT COUNTY LUNATIC ASYLUM, Barming Heath, near Maidstone.—Chief Medical Officer and Superintendent. Salary £800, with unfurnished house, &c.

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Hampstead and Northwood.—Resident Medical Officer for the Country Branch Hospital at Northwood, Middlesex. Honorarium £80, with board and residence. Also Honorary Dental Surgeon.

NORTH CAMBRIDGESHIRE HOSPITAL, Wisbech.—Resident Medical Officer, unmarried. Salary £100 per annum, with furnished rooms, attendance, coals, gas, and washing.

[illegible] AND DISPENSARY.—Senior House Surgeon. [illegible] am, with rooms, commons, and washing.

[illegible] AL AND EYE INFIRMARY, Devonport.—Assistant [illegible] lary at rate of £50 a year.

ST. MARY'S HOSPITAL FOR SICK CHILDREN, Plaistow, E.—Assistant Resident Medical Officer for six months. Salary at rate of £80 per annum, with board, residence, and laundry.

SOUTH SHIELDS, COUNTY BOROUGH OF.—Medical Officer of Health. Salary £300 per annum, rising to £500.

SOUTH UIST PARISH.—Medical Officer and Public Vaccinator. Salary £77 10*s*.

WEST BROMWICH DISTRICT HOSPITAL.—Resident Junior House Surgeon. Salary £50 per annum, with board, lodging, washing, and attendance.

WEST HAM HOSPITAL, Stratford, E.—Junior House Surgeon for six months. Salary at rate of £75 per annum, with board, residence, &c.

WEST RIDING ASYLUM, Wakefield.—Locum Tenens for two or three months. Salary £3 3*s*. per week, with residence, board, &c.

Births, Marriages, and Deaths.

BIRTHS.

HAVELOCK.—On July 21st, at Sunnyside, Montrose, N.B., the wife of John G. Havelock, M.D., of a son.

LIGHT.—On July 21st, at Tillingham, near Southminster, Essex, the wife of Leonard W. Light, M.R.C.S., L.R.C.P. Lond., of a son.

PRINCE.—On July 14th, at Reigate, the wife of Peregrine C. Prince, M.R.C.S., L.R.C.P., of a son.

MARRIAGE.

THOMAS—ATKINSON.—On July 20th, at St. Mary's Church, Handsworth, Yorks, by the Rev. Francis Atkinson, M.A., Rector of St. Mary's, Birnam, N.B., uncle of the bride, assisted by the Rev. Cyril Walker, M.A., curate of Averham, Notts, and by the Rev. James Mowat, M.A., rector of the parish, George Crewdson Thomas, M.D., M.R.C.P., of Sydenham, only son of George E. Thomas, of Swainswick, Bath, to Eveline Mary, elder daughter of William Atkinson, The Birklands, Handsworth.

DEATHS.

GLASSINGTON.—On July 25th, suddenly, at 6, Pelham-crescent, S.W., Louise, the dear little wife of Charles W. Glassington, M.R.C.S., L.D.S.

SIMON.—On July 23rd, at Kensington-square, in the 88th year of his age, Sir John Simon, K.C.B., F.R.S.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

WHAT IS THE PROPER REPLY?

A CORRESPONDENT has asked us how he should reply to the following letter which has been addressed to himself and his partners by a gentleman who has started in the neighbourhood as an "optologist":—

> GENTLEMEN,—Having been successfully examined by Dr. Andrew Wilson, Dr. E. H. Tipper, Mr. J. T. Gradon, M.A., and Dr. E. H. Cook, D.Sc. Lond., who are the examiners to the British Optical Association, I am writing to ask if you would help me by sending any cases of defective vision which can be corrected by refraction. I have had a room fitted up over Mr. ——'s pharmacy solely for sight-testing and have the most modern apparatus. The two main points of the above association are: 1. To protect the public against unscientific persons who prescribe glasses. 2. That its men are so trained that they know directly should medical advice be necessary. I am, yours faithfully,

The writer incloses a card in which he styles himself M.P.S., D.B.O.A., and "optologist." We do not think the communication requires any reply. The "optologist" can be used as an optician if his services are wanted, but he must be careful not to practise ophthalmology, an integral branch of medicine, without medical knowledge.

REMARKABLE PHENOMENON OF CRYSTALLISATION.

THE *Scientific American* of July 16th states that a curious phenomenon was observed lately by Professor Stanislas Meunier of the University of Paris He found that a certain number of plaster balls left to dry [illegible] into [illegible] reached one-fifth of an inch in length. In an account of this phenomenon which he gave to the Académie des Sciences he states that although the balls of plaster had been formed under quite similar conditions and even used in the same experiments they were far from showing the same crystalline appearance. In some of them a glass was needed to see the crystals, while in others they could be distinguished with the naked eye and were from 0·2 to 0·25 inch long. Some of the specimens showed a radial arrangement of the crystals which is not seen in the natural plaster stone. The crystalline structure varies with the distance from the surface in the same ball. It is scarcely noticeable on the surface and the ball must be broken in order to observe it. When broken in halves the crystallisation is more strongly marked near the centre than in the outer parts. At the periphery there is a compact coating or skin about one-thirtieth of an inch thick. Starting from this the mass assumes the character of an irregular assemblage of crystals, more or less coherent, which often fall apart at the least shock.

GLYCEROPHOSPHATES.

IN the analytical notices on p. 226 of THE LANCET of July 23rd it was stated that the glycerophosphates of calcium, iron, and sodium of Messrs. Burroughs, Wellcome, and Co. could be had in tabloid form. As a matter of fact, the preparations sent to us were pure specimens of the salts for prescribing purposes.

A WARNING.

To the Editors of THE LANCET.

SIRS,—On Monday, July 25th, a young man of German appearance was shown into my waiting-room and said that he wished to make an appointment for me to see "Countess Reichenstein" either at my house or at a hotel in Kensington next day. She had been recommended to me by a doctor in Southampton. The appointment was duly made. The same afternoon two pieces of silver were found to be missing from my room. The police are now searching for my friend. He is about 5 feet 7 inches in height, aged about twenty-two years, pale, rather spotty face, clean-shaven or very light moustache, slight build, wore a dark short coat, and carried a light grey overcoat on his left arm, and carried two books under the other. He spoke with a strong foreign accent. If any of your readers are visited by this gentleman they are requested to inform the police.

I am, Sirs, yours faithfully,

Buckingham-gate, S.W., July 28th, 1904. H. A. DES VŒUX.

THROMBOSIS AS A SEQUEL OF APPENDICITIS.

A CORRESPONDENT writes:—"Viator" will find the subject referred to in the English edition of Nothnagel's "Diseases of the Intestines and Peritoneum," p. 898, where 400 cases of appendicitis at St. George's Hospital are quoted from. In these 400 cases, which were analysed by Mr. B. N. Tebbs, there were eight examples of thrombosis in the legs. The subject is important from the liability to pulmonary embolism after appendicitis. The thrombosis may be due to extension of inflammation to the right external iliac vein. But it is almost, if not quite, as common on the left side and may then be due to micro-organisms settling in the vein wall, which they have reached by the blood stream, and setting up first phlebitis and then thrombosis. Another bearing of thrombosis after appendicitis is that it may by embolism give rise to pleurisy.

P. C S—The number of rejections at the examination in question was not unprecedently large As far as chemistry is concerned it was considerably less than at the corresponding examination of last year though rather more than at the April examination of 1902

A J A—We shall be glad to support any such appeal, but how is our correspondent going to make sure that his bark will be followed by a bite?

Permille vires—We have no knowledge of the researches in question but we will make inquiries for our correspondent.

Medical Diary for the ensuing Week.

OPERATIONS

METROPOLITAN HOSPITALS

MONDAY (1st)—London
Thomas's (3 30 P M) S
Middlesex (1 30 P M)
Samaritan (Gynæcolog
(2 P M) Royal Ortho
Gt. Northern Central (2.30 P M), West London (2.30 P M), London Throat (9 30 A M) Royal Free (2 P M) Guy's (1 30 P M)

(2 P M), Central London Throat and Ear (2 P M)

(9.30 A.M) Guy's (1 30 P M)

Thomas's
3 P M) St.
Middlesex
North West
2.30 P M)
St Mark's
den square

(9 30 A M) Guy's (1 30 P M)

FRI

P M), Middlesex
lege (9 15 A M)
Mary's (10 P M)

At the Royal Eye Hospital (2 P M) the Royal London Ophthalmic (10 A M.) the Royal Westminster Ophthalmic (1 30 P M) and the Central London Ophthalmic Hospitals operations are performed daily

EDITORIAL NOTICES.

It is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS and not in any case to any gentleman who may be supposed to be connected with the Editorial staff It is urgently necessary that attention be given to this notice

It is especially requested that early intelligence of local events having a medical interest or which it is desirable to bring under the notice of the profession, may be sent direct to this office

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THE INDEX TO THE LANCET

THE Index to Vol I of 1904, which was completed with the issue of June 25th, and the Title page to the Volume, were given in THE LANCET of July 2nd

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(Taken daily at 8 30 a m by Steward's Instruments)

THE LANCET Office July 28th 1904

Date	Barometer reduced to Sea Level and 32° F	Direction of Wind							Remarks at 8.30 A.M
July 22	30·05	W		119	75	57	60	62	Cloudy
" 23	30·01	S W		126	77	62	61	63	Cloudy
" 24	29 81	S W		127	73	64	66	71	Fine
" 25	29 67	F		103	73	63	65	69	Cloudy
" 26	29 63	S W	1 55	123	73	60	60	63	Cloudy
" 27	29 73	N E.	0·03	90	69	60	60	61	Raining
" 28	30·00	W	0·01	110	72	60	60	63	Cloudy

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Address in Surgery

ON

THE CEREBRAL INVASION OF PATHOGENIC AND PYOGENIC ORGANISMS

AND ON

THE CHOICE OF LIGATURES.

Delivered at the Annual Meeting of the British Medical Association at Oxford on July 28th, 1904,

By Sir WILLIAM MACEWEN, M.D. Glasg., F.R.S.,

REGIUS PROFESSOR OF SURGERY IN THE UNIVERSITY OF GLASGOW.

Mr. President and Gentlemen,—Several points concerning cerebral invasion of pathogenic and pyogenic organisms have previously been brought to the notice of the profession in various communications by me, especially in a work on "Pyogenic Diseases of the Brain and Spinal Cord," published in 1893, and in the inaugural course of Lane lectures given by me in San Francisco in 1896. Subsequent experience, though modifying somewhat, has mainly confirmed and emphasised previous observations.

LOCALISATION OF BRAIN ABSCESS ARISING FROM PRIMARY PYOGENIC CRANIAL LESIONS.

The first point refers to the localisation of brain abscess. Prior to the advent of cerebro-spinal surgery in its later development, abscess of the brain was regarded solely as of a pyæmic nature, occurring by metastasis and, owing to the aberrant manner in which abscess formed, its localisation was regarded as impossible, except in the few instances where abscess happened to occur in parts which gave rise to functional manifestations. Even where abscess occurred as secondary to a primary pyogenic cranial lesion some were inclined to believe that the brain abscess was equally due to a pyæmic manifestation and accordingly could occur at any part of the brain distant from, and without relation to, the primary lesion.

Such was the old view, but early observation showed that this view was untenable. It was seen that all brain abscesses arising from the foci within the cranium were, if not in direct contact with such foci, at least in contact with the infected path which lay between the primary focus and the abscess. Knowing the primary cranial pyogenic focus *one could count upon the abscess being situated within a* circumscribed radius of that point. Subsequent experience has abundantly confirmed this view and shows that in the great majority of instances in which abscess of the brain has formed from primary foci on the exterior of the skull the brain abscess is situated in direct contiguity with the infected structures. Anatomical features, or the results of prior pathological processes, usually determine the particular direction in which the pyogenic organisms proceed from the primary focus to the brain. If the cerebral abscess remains unrelieved and continues to grow it may by extension implicate other regions of the brain distant from the primary external focus; even then the contiguity of diseased structure is generally traceable. So that, by way of illustration, if one takes intracranial abscess resulting from ear disease, one knows that such abscess will form within a limited area of the middle ear, the particular direction of the extension being determined by the anatomical condition of the parts and the direction of the prior pathological encroachments. The abscess will be found either within the temporo-sphenoidal lobe contiguous with the infected tissue round the sigmoid sinus or in the cerebrum in touch with the infected path from the tegmen antri or tympani, the pathological processes having generally prepared the way and having left in most instances an easily traceable path. This being correct, it must be apparent in a case of abscess of the brain that the preliminary investigation is facilitated and the treatment simplified, as access to the abscess in either position may be had by extension of the aperture already made in the mastoid.

THE DETERMINATION OF ABSCESS VERSUS MENINGITIS.

Anatomical features are often secondary determining factors between abscess and meningitis, and in the latter case between localised and generalised lesions. If the access of the pyogenic organisms has been by way of the tegmen or the sigmoid, abscess of the brain or cerebellum is frequent; and if meningitis results it is at least primarily localised, often the result of a soldering process, does not immediately involve vital structures, and is often amenable to prompt treatment.

ABSCESS DOES NOT OCCUR BY PYOGENIC ORGANISMS TRAVELLING BY WAY OF THE INTERNAL AUDITORY MEATUS.

If, on the other hand, the pyogenic organisms have travelled by way of the internal auditory meatus they occasion leptomeningitis of a serious kind on account of its being basal, early involving the medulla and respiratory centres; and, secondly, on account of its inaccessibility. *Abscess of the brain seldom or never occurs by pyogenic* organisms travelling by way of the internal auditory meatus. My own personal observation has never shown me a single instance of such an occurrence, nor would it be likely to occur from the anatomical features of the parts. The brain is kept apart from the original pyogenic focus by the whole length of the internal auditory canal, while the expansion of the brain membranes which ensheath the nerves in the canal dip right into it. The leptomeningitis is thus set up in the canal and from there spreads over the basal membranes. Collections of purulent matter are frequently in the meshes of the pia mater and arachnoid and occasionally they produce a softening and ulceration of the brain surface but not abscess of the brain.

TUBERCLE OF THE MIDDLE EAR EXTENDING TO THE BRAIN, THE MEMBRANA TYMPANI REMAINING INTACT.

Tuberculous meningitis has occurred in ten cases seen by me in which the middle ear was involved without perforation of the tympanic membrane and in the majority without swelling over the mastoid. In five the internal auditory meatus was the channel by which the tubercle spread from the middle ear to the membranes covering the cerebellar fossa and the basal ganglia, and these parts were so clearly and extensively involved that no attempt was made by way of operation to follow the disease after removing the primary focus from the middle ear and its adnexa. Those five succumbed to the tuberculous meningitis after various periods, some lingering for months. In five other cases intracranial operations were performed as the meningitis was unilateral and it was hoped to be still localised and to have spread by way of the tegmen. In the first of these that hope was not realised, the disease having spread beyond the possibilities of recovery. In the second the disease had spread toward the base beyond the limits of what was deemed prudent to follow. In this case, though the disease had spread through the tegmen antri and tympani, it had advanced too far and radiated in many directions. The patient improved after the operation and lived in the possession of a fair amount of health, sufficient to enable him to resume work and have a limited enjoyment of life for three years, with two meningeal attacks of short duration in the interval. At the expiry of this time his health markedly declined and he died in a fourth attack of typical basal tuberculous meningitis. In the other three cases which came under observation at an earlier period of the disease the meningitis was confined to the basi-membranes and lateral aspects of the temporo-sphenoidal lobe and were dealt with successfully, the patients not only recovering from the operation but regaining strength and vigour. The mental capacity of one of these has been sufficient to enable him to gain a foremost place in a large public school. Another instance of tuberculous meningitis (the eleventh) originating in a tuberculous lesion in the middle ear without rupture of the membrana tympani occurred in a gentleman who was only seen by me in the advanced stage of the disease, while comatose, and consequently when the usual avenues whereby information may be gleaned from the patient were closed. The only item of history that could be taken as connecting the ear with the disease was the fact that some months previously, while in Algiers, he had taken cold in the head and had complained of slight pain in his right ear, which passed off in a few days without occasioning any discharge through the external ear. When seen by me the membrana tympani was intact but somewhat wash-leather like, and slight wincing was elicited by pressure over the right mastoid region, while like pressure was tolerated over the left mastoid. There was just a possibility of affording relief by operation. The mastoid was found filled with tuberculous granulation tissue way through." Secondly, the introduction of the gut into tissues deprived of their vascularity or the vitality of which is otherwise lowered. The catgut suture remains for long periods unacted on in the midst of a slough, the leucocytes not being able to penetrate the tissue to reach the gut. Thirdly, repeated movement of a stitch after introduction breaks the connexion of the suture with the living parts and prevents leucocytal penetration; so that if the catgut thread be moved frequently in the tissues the leucocytes cannot exert their living action in the gut and therefore it remains unabsorbed. Fourthly, septicity in a wound retards absorption by weakening the tissues and by degenerating and destroying the leucocytes. When gut becomes infiltrated by pyogenic organisms and their ptomaines, as well as by pus corpuscles, it becomes more resistant to absorption and may ultimately be extruded. An impervious suture answers better in the midst of suppuration. It is evident that not only an aseptic suture must be used, but it must be introduced into an aseptic wound before one can secure the advantages of such gut. If catgut be introduced into a collection of fluid in the midst of the living tissue such as blood, serum, or pus, they will remain for weeks macerated but still intact. If the gut should, however, come into contact with the living tissue at the side of such a collection, some erosion of the part of the foreign body in contact with the tissue would ensue. It is evident that mere maceration in the tissue does not account for absorption of the catgut.

THE MODE OF ABSORPTION OF CATGUT.

Twenty-four hours after the catgut has been placed in the tissues it is found to be surrounded by leucocytes which closely invest the gut and thereafter sooner or later, according to its resistant power, gradually erode its surface and penetrate into its interior. The strands of gut in contact with these leucocytes gradually undergo erosion and appear rough and pitted on the surface. At the same time many of the leucocytes in the vicinity of the gut become swollen and take on the colour of the catgut. Between these swollen leucocytes and the strands of gut fresh leucocytes appear in the vicinity, gradually taking the place of the swollen cells. The swollen cells seem as if they had absorbed portions of the catgut and were in process of ingesting it. Such swollen cells, marked by their size and discolouration, may occasionally be seen at a considerable distance from the catgut, as if they had wandered from the scene, either by their own amœboid action or were aided or pushed aside by the movements of the fresh cells going to the attack. Occasionally the swollen cells appear so bloated that a doubt arises whether for the time at least their amœboid power had diminished or was in abeyance. The principal invasion and erosion of the catgut thread is from the periphery which results in the thinning of the thread, it being by-and-by attenuated to a mere film which rapidly disappears. While this peripheral erosion is proceeding the absorption is further aided by the activity of the penetrating leucocytes which surround and detach minute portions from the periphery which are speedily devoured. The absorption of the catgut is due to the action of the living cells and therefore is dependent on their presence and on the facilities which are afforded them for acting on the catgut undisturbed. After absorption of the catgut has proceeded for some time, and while the absorption of other parts of the gut is still proceeding, an infiltration of embryonic connective tissue cells begins to appear which forms the nucleus of a new fibrous tissue which in attenuated form ultimately remains, marking the place of the foreign body. The amount of connective tissue which forms depends somewhat on the vascularity of the living tissue and on the rapidity of absorption of the catgut. The more rapid the absorption, other things being equal, the less the connective tissue.

The use of material such as has been described is of service in facilitating wound healing. One puts into a wound just such foreign bodies as are absolutely required and these, while being sufficient to effect the purpose for which they are intended, are afterwards speedily removed by the action of the living tissues. In aseptic wounds, before the patient comes out from the influence of the anæsthetic, the surgeon has done everything necessary to enable nature to heal the wound. Its first and only dressing is applied. That dressing being of the simplest, a layer of dry sterile gauze or a film of translucent celloidin just overlapping the wound and rendering it impervious. At the end of the period deemed sufficient for wound healing this dressing may be removed, or it may be allowed to remain until it is shed, when all the external portions of the sutures are found adhering to its surface. What a comfort to be able to say at the end of an operation that in all probability there is nothing further to be done by way of handling or touching the wound which will not be looked at until it is thoroughly healed. It is no longer necessary to disturb the patient by dressing in order to remove sutures which, after they have served their function, will be silently and perfectly removed by the activity of the living cells in the patient's body. A wound which while being made is painless and remains so throughout, which heals without inflammation or the production of pus and under the dressing applied at the time of the operation, is ideally perfect.

The Croonian Lectures

ON

BRIGHT'S DISEASE AND ITS VARIETIES.

Delivered before the Royal College of Physicians of London on June 7th, 9th, 14th, and 16th, 1904,

BY *JOHN ROSE BRADFORD*, M.D., D.Sc. LOND., F.R.S.,

FELLOW OF THE COLLEGE; PROFESSOR OF THE PRINCIPLES AND PRACTICE OF MEDICINE, UNIVERSITY COLLEGE; PHYSICIAN TO UNIVERSITY COLLEGE HOSPITAL, LONDON.

LECTURE IV.[1]

Delivered on June 16th.

CHRONIC BRIGHT'S DISEASE.

MR. PRESIDENT AND GENTLEMEN,—Having considered some of the points in connexion with acute Bright's disease and acute nephritis I will now pass on to chronic Bright's disease. The difficulties of clearly differentiating the various forms of chronic Bright's disease are undoubtedly greater than those of separating various forms of acute nephritis and acute Bright's disease. In the first place it would not seem justifiable to include degenerations of the kidney under the term of Bright's disease, although doubtless some of them clinically greatly resemble the true forms of Bright's disease. Probably all writers will agree to separating the amyloid kidney from the category of Bright's disease, although we all know that some of the forms described as the large white kidney were really instances of amyloid degeneration. Amyloid degeneration is no doubt very apt to occur associated with Bright's disease. Still, the etiology and even the clinical history of the condition are so different from those of Bright's disease that it is more convenient to treat of it as a separate entity.

One of the main difficulties in the classification of Bright's disease is the question of the position or nature of the so-called granular kidney. So many writers still include this as a definite variety of Bright's disease notwithstanding the profound differences in its morbid anatomy and especially in its clinical history from those seen in true Bright's disease. Of course, if every kidney the surface of which is granular is to be called a granular kidney, then doubtless granular kidney must be included as a form of Bright's disease, since as a matter of fact there are very few forms of chronic Bright's disease in which the surface of the kidney is not either finely or coarsely granular. A large white kidney presenting the typical smooth surface is after all not so very common, and putting aside rare forms of the disease this is the only form of chronic Bright's disease in which the surface of the organ can be said to be entirely free from irregularity. The granular kidney, or as it is preferable to call it the red granular kidney or raspberry kidney, is such a very definite renal lesion, presenting but little variation in the different specimens which we see and having such a very definite clinical history, that it certainly seems more convenient to separate it from Bright's disease. As I have already said I think only confusion is caused by grouping it with those forms of Bright's disease in which the surface of the organ is granular. The tendency of including granular kidney as a form of Bright s disease may possibly be largely due to the theoretical pathology which was in vogue some years ago and which looked upon the red granular kidney as a stage in the evolution of chronic Bright s disease No pathologist or clinician would admit at the present time that the ordinary typical red granular kidney is a final stage in the evolution of acute or chronic Bright s disease, although doubtless some forms of contracted kidney presenting a granular surface may in exceptional circumstances be such a final stage The main reasons for including the granular kidney as a form of Bright s disease are probably the fact that in some instances it may have a tox extent have a similar etic nd secondly, that some of t the body are similar to those seen in Bright s disease Thus putting aside the cardio vascular changes which may or may not be the result of a granular kidney uræmia is sometimes seen as a complication of the true granular kidney, and the same is true of certain inflammatory complications such as pericarditis, although both uræmia and those inflammatory complications are much more typical complications of true Bright s disease

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[1] *Lectures I., II., and III.* were published in THE LANCET of July 16th (p. 125), 23rd (p. 191), and 30th (p. 283), 1904, respectively.

If arguments such as these are valid in order to justify the inclusion of the granular kidney as a form of Bright s disease similar arguments might justify the inclusion of such widely divergent lesions as the amyloid kidney or the cystic kidney and then the term Bright s disease would simply become a label for almost any condition in which albuminuria and dropsy and uræmia were present For those reasons the granular kidney will not be considered a variety of Bright s disease At first sight it may seem desirable to look upon the lesions found in the granular kidney as part and parcel of a widespread arterial degeneration and this in a considerable number of cases is no doubt true and more especially in those where notwithstanding the presence of very extensive arterial lesions the kidneys although granular are still large Probably all pathologists would agree that this form of granular kidney might with justice be looked upon as part of a widespread degeneration The difficulties alluded to above present themselves with the small red granular kidney In this form of the lesion the general arterial changes are frequently as well marked as in the other variety but this is not invariably the case and there are therefore difficulties in looking upon this form of granular kidney as merely a later stage in the evolution of the other and this justifies to some extent the opinion that such a lesion may be primarily renal

Putting on one side the true red granular kidney two fundamental varieties of chronic Bright s disease may be recognised The differences between the two forms are seen in the morbid anatomy and more especially in the clinical history and course of the disease It is possible that there may be differences in the etiology, but there is so much uncertainty at present as regards the etiology of Bright s disease generally that it is not possible to be confident with regard to this In the first form of chronic Bright s disease hich are usually kidney, although which the kidney is really entitled to be called large or where there is much increase in size are not very numerous Such kidneys are usually a little above the normal size but as just mentioned the increase may be much more considerable than this the weight of the organ may be twice or even three times that of the normal kidn and this is espe tions of the cor degree of pallor portion, however is congested and its colour affords a contrast to that of the surrounding cortex The capsule strips readily and leaves the well known smooth and somewhat marbled surface On microscopical examination such a kidney presents changes in the glomeruli in the tubules and in the interstitial tissue varying in their degree of severity and also in the relative incidence on these three sets of structures The epithelium of the glomerular chamber often shows signs of proliferation The epithelium of the tubules usually presents profound changes being shed in places and having lost its characteristic structure in others and being replaced in others by a layer of glass like hyaline cells The tubules themselves are dilated and more or less obstructed by the débris formed by the separated epithelium Casts are numerous and extravasations of blood may frequently be seen not only in the interstitial tissue but also in some of the tubules The interstitial connective tissue is increased in amount and in some of the instances where the kidneys oth the increase in the con very considerable in amount ve sels of the glomerular tuft is commonly present and it is by no means unusual to find young connective tissue in increased amount in the glomerular tuft The lesions found in what is usually spoken of as the large white kidney no doubt differ in different cases in their relative incidence but owing to all the elements of the kidney being affected the lesion may be well described as a diffuse one and there is something to be said for the term chronic diffuse nephritis sometimes applied to these cases

In the second form of chronic Bright s disease, to which it is somewhat difficult to apply a name but which may perhaps be called for purposes of simplicity the contracted white kidney the organ is very much smaller than normal, rivalling the granular kidney in size and sometimes weighing as little as from one and a half to two ounces, the colour both of the surface and of the organ on section may vary but it is usually of an opaque whitish yellow but very commonly with areas here and there of congestion so as to produce especially on the surface of the organ a mottled appearance The capsule is usually markedly thickened and sometimes very considerably so On stripping it leaves a coarsely granular surface the granulations being of large size and extremely well marked The stripping of the capsule does not commonly lead to much tearing of the renal substance and very often to none at all The cortex is greatly diminished in amount and may even be reduced to one sixteenth of an inch on section The reduction in the amount but at the same time is not section of the cortex presents con appearance the pyramidal portion of the kidney like that of the large white kidney is usually somewhat congested but not to the same marked extent so that the contrast between the cortex and the medulla which is such a striking phenomenon in the large white kidney is not nearly so obvious in the contracted white kidney On microscopic examination the most striking phenomena are, on the one hand the large areas in which there are but little remains of renal tissue owing to the very great overgrowth of fibrous tissue Many of the tubules have lost their epithelium and the great diminution in the size of the kidney is very largely dependent on such shedding and on the subsequent collapse of the walls of the tubules In some areas may be found more or less extensive remains of renal tubules with the epithelium but comparatively little altered In others the tubules are lined by hyaline and glass like cells and it is by no means uncommon to find here and there dilated tubules lined with pavement like epithelium approaching to the character of cysts The glomerular chamber is thickened and the vessels of the tuft present marked changes both in the hyaline degeneration and in the fibroid overgrowth There is a very great overgrowth of the interstitial tissue of the kidney generally and areas are found scattered over the kidney consisting of but little except fibrous tissue The microscopic appearances of such a kidney present points of resemblance to those seen in the true granular kidney On the whole it may be said that the overgrowth of fibrous tissue in the contracted white kidney is more uniform than that seen in the true granular kidney and that the epithelial changes are more marked Further, in the contracted white kidney the arterial lesions only exceptionally reach the high degree of development seen in the true granular kidney and this is not only true of the arterial lesions of the ve els of the body generally but also of those in the kidney

There are therefore marked differences in the macroscopic and microscopic appearances of the large white and of the contracted white kidney of Bright s disease in typical instances of the two diseases But considerable difficulty is often experienced in correctly placing some forms of chronic Bright s disease Thus very exceptionally kidneys are found very small in size and resembling in that respect the contracted white kidney, but on the other hand quite smooth on the surface and showing no great overgrowth of fibrous tissue and it is difficult to classify such instances as the c Again kidneys presenting many of the features of the contracted white kidney but of a somewhat larger size but always less than the normal are seen. In these instances it is very common for the granulations on the surface seen on stripping the cortex to be smaller than those seen in the typical form of the contracted white kidney. It is owing to differences such as these in certain instances of the disease that the view has been advanced that all these forms of chronic Bright's disease are really stages in the evolution of one and the same malady and if our attention is confined to the study of the facts of the deadhouse there is no doubt much to be said for this view. Many pathologists who have absolutely given up the theory that the true red granular kidney is a final stage in the life-history of Bright's disease still hold the view that the contracted white kidney is the sequel to the large white kidney and that the large white kidney is a sequel of acute Bright's disease. In other words, they consider that there are, so to say, two forms of interstitial nephritis, one the sequel of chronic parenchymatous and tubular nephritis and the other associated with the widespread arterial degeneration known as the true granular kidney. Others have attempted to overcome the great difficulties in the interpretation of these cases by suggesting that in some instances of the contracted white kidney we are really dealing with the true red granular kidney in which a subacute tubular nephritis has occurred as a complication.

In addition to looking upon the contracted white kidney as a sequel of the large white kidney or as a true granular kidney with an acute or subacute nephritis superimposed there are at least two other modes of origin for this variety of renal disease. It might be regarded as a sequel of acute nephritis or on the other hand it might be a definite variety of Bright's disease, that is to say, a form of malady maintaining its individuality throughout its evolution. These difficulties as regards the correct interpretation of this very definite form of renal disease cannot, I think, be determined solely from considerations based on the morbid anatomy of the disease, but the clinical history of Bright's disease must also be taken into account. Even on grounds afforded by the study of morbid anatomy it is improbable that contracted white kidney can be looked upon as a true granular kidney with a subacute nephritis superimposed. The interstitial overgrowth is far more irregularly distributed in the red granular kidney, so that the pattern of a microscopic section is different, and by these means sections of these two forms of renal disease may often be readily differentiated. Further, the arterial lesions in the renal vessels of the red granular kidney, and especially the endarteritis, are very much more marked, although, of course, it must be admitted that in most instances of the contracted white kidney somewhat similar arterial lesions are found to a considerable degree of development both in the renal vessels and those of the body at large. The contracted white kidney, however, may occur and cause death from uræmia without the arterial lesions in the body generally reaching the high degree of development that we associate with the red granular kidney. In some instances of very advanced forms of this lesion neither the arteries generally nor the heart present any marked changes, such as endarteritis and hypertrophy. This absence of cardiac hypertrophy in some forms of chronic Bright's disease, not only where the kidneys are large but also where they are small and fibroid, has led some writers to differentiate these cases as a definite variety under the term of aplasic Bright's disease.

The conditions determining the absence of cardio-vascular changes in cases of contracted white kidney are unknown. It can scarcely be dependent, as has been suggested, on an incapacity on the part of the tissues to respond to a stimulus, inasmuch as this absence of cardio-vascular changes is not uncommonly seen in the most advanced and typical forms of the contracted white kidney occurring in young adults. This affords, I think, a point of distinction between the contracted white kidney and the true granular kidney, since in the former it is not uncommon to meet instances where not only the vascular lesions are ill-developed in the general vessels of the body but the cardiac hypertrophy may be absent, whereas in the latter, the true granular kidney, it is certainly extremely rare, if not unknown, to find a renal lesion except as part and parcel of a widespread arterial degeneration, and it is more common to find the lesions in the heart and in the blood-vessels generally advanced to a high degree with the renal lesions comparatively slight than to find the converse.

Another line of argument that may be advanced in order to discriminate between the contracted white kidney and the granular kidney is that the former on microscopic examination does not show any changes that can be looked upon as indicative of the presence of an acute nephritis. In many instances the disease causes death more or less suddenly or after a short illness in patients who may have maintained apparently good health until very shortly before their last illness, yet even in these instances the microscopic appearances of the kidney show essentially chronic changes. On these grounds, therefore, quite apart from the clinical history of the cases which we will consider later, I see no reason for looking upon the contracted white kidney as a red granular kidney in which a subacute or acute nephritis has occurred as a complication. There is undoubtedly more to be said on morbid anatomy grounds for looking upon this lesion as a sequel of the large white kidney. The great diminution in the size of the organ in the contracted white kidney is no doubt largely dependent on the shedding of the tubular epithelium and the practical disappearance of large areas of renal tubules; and of course it must be admitted that kidneys presenting the appearance of the large white kidney are seen of all sizes, so that it would not be difficult to collect a series of cases from the most extreme large white kidney on the one hand to the extreme contracted white kidney on the other hand. In the large white kidney there is an overgrowth of fibrous tissue varying in amount and the greater amount present in the contracted white kidney might be looked upon as a result of a progressive change possibly associated with the destruction of the epithelium. Further, the arterial system and the heart do undergo changes, as is well known, in the large white kidney and therefore these also might be accounted for.

Confining ourselves, however, strictly to the morbid anatomy of the two diseases there are objections to accepting this view. In the first place, it is definitely known that the large white kidney may remain large for many years. Hence the conversion of the large white into the contracted white kidney could not at any rate be a normal or a necessary sequel. The overgrowth of connective tissue present in the large white kidney would seem to be associated with the finely granular appearance of the surface of the cortex. This is especially well seen in those specimens of the large white kidney which are but little above the normal kidney in size, whereas the granulations seen in the contracted white kidney have a totally different appearance owing to their large size. Further, the proliferative changes which are seen to such a remarkable degree in the glomerular chambers of the large white kidney are not, so far as my experience goes, present in the glomeruli of the contracted white kidney. It may, of course, be argued that none of these points of difference in the morbid anatomy are of sufficient importance to justify the conclusion that the one lesion is not necessarily derived from the other and, as I have already stated, I think myself that the main reason for looking upon the contracted white kidney as not necessarily dependent on, or as a sequel of, the large white kidney is to be derived from clinical rather than from morbid anatomy considerations.

The remaining question is that the contracted white kidney may possibly be the sequel of acute nephritis. This is a view that on *a priori* grounds is very probable and one which scarcely can either be proved or disproved by the morbid anatomy of the disease, so that it will be convenient to pass on to the consideration of some of the points in the clinical history of chronic Bright's disease. There can be little doubt that, from the clinical point of view, two varieties of chronic Bright's disease may be differentiated. The first is where the prominent effects are dropsy and the tendency to the occurrence of secondary infections, more especially with inflammation of various serous membranes. In the second variety of the disease the prominent effects produced are grave disturbances of nutrition, such as marked wasting and the occurrence of uræmia and especially of acute uræmia, and there is further the very marked negative characteristic that dropsy is either completely absent or at any rate very trivial in amount and it is much more common for it to be completely absent. Like all clinical distinctions these are not absolute; thus uræmia may undoubtedly occur in both forms of the disease and it might even be said that chronic and subacute uræmic symptoms are common in that form of Bright's disease in which dropsy is prominent. But the most severe forms of uræmia, known as the acute or even the fulminating, are in my opinion peculiarly associated with that form of chronic Bright's disease where dropsy is absent or ill-developed. Inflammatory complications, such as pericarditis, pleurisy, pneumonia, &c., undoubtedly occur in both varieties so that the main differentiation from a clinical *standpoint is according to the presence or absence of dropsy* and the degree and development and variety of the uræmic symptoms present. Wasting, no doubt, is oftentimes present to a very high degree in the cases where dropsy is a marked feature but it is masked by the occurrence of the dropsy and the symptoms produced by the waterlogged condition of the patient commonly mask those dependent on the disturbance of the nutrition. Wasting is probably of universal occurrence in all serious kidney diseases but it reaches a very high degree of development in some forms of chronic Bright's disease rivalling that seen in malignant disease, and from time to time cases are seen where the patient seeks advice solely on account of the progressive loss of strength and flesh and where the renal origin of the trouble may be completely overlooked by a careless observer. Although wasting is the most conspicuous disorder of nutrition produced [illegible] another remarkable effect someti[illegible]omewhat resembling the pigmen[illegible] and one of the specimens on the table of contracted white kidney is derived from a patient where the great loss of strength and of flesh and the occurrence of pigmentation with some vomiting led to the diagnosis of Addison's disease although the case was really one of contracted white kidney.

The clinical picture of ordinary chronic Bright's disease associated with dropsy is so well known that it is quite unnecessary to consider it at any length. But the other form of chronic Bright's disease is one which I am convinced is very frequently overlooked owing to the latent course the malady frequently runs and the apparent obscurity of many of the symptoms produced. One of the most puzzling features of this form of chronic Bright's disease is the fact that such a large number of the cases are seen in young persons frequently under 30 years of age not uncommonly under 25 years who state that they have had good health until perhaps a few weeks or even sometimes a few days before the onset of symptoms that are rapidly fatal. It is one of the most striking instances in medicine of a disease that is apt to run a latent course. I have known of an instance in an apparently healthy young man 25 years of age, presenting no symptoms and where the condition was discovered as a result of an examination for life insurance where death resulted from acute uræmia within a fortnight of the discovery of the existence of the albuminuria. In other cases the onset l[illegible] persons apparently in[illegible] with acute uræmia of [illegible] variety.

The forms which the uræmia *may assume in this* variety of Bright's disease are numerous and liable to give rise to considerable difficulty sometimes in the diagnosis. Thus it is not very rare for the uræmia to be of a maniacal type and hence lead to confusion between these cases really of chronic Bright's disease and acute mania. I have seen one instance where a young woman was admitted to hospital on account of cataleptic phenomena and where death resulted after a very short illness from acute uræmia. In other instances the first symptom that may attract attention is that very co[illegible]nœa leading pe[illegible] the course of a[illegible] owing to the so called asthma being really uræmic dyspnœa associated with this grave lesion of contracted white kidney. I think it may be stated that on the whole these patients are most likely to come under observation suffering from one or another of the many forms of acute or even of subacute uræmia. Although these patients are liable to present prominent uræmic symptoms during the last illness there are *other* features which are *fairly characteristic of* the second variety of chronic Bright's disease. Thus the patients are usually young generally under 35 years of age and frequently between 30 and 20 years of age and as I have already mentioned they may present marked symptoms general loss of strength with wasting or some disturbance of nutrition such as darkening of the skin. Headache may be a prominent symptom and owing to the frequent occurrence of very marked fundus changes in this variety of Bright's disease confusion with cerebral tumour or even cerebellar tumour may occur. A considerable proportion of the cases are seen in young women and these frequently present an aspect superficially resembling that of chlorosis the *resemblance being all the greater in* some instances owing to the presence of headache. Perhaps the most remarkable feature of this variety of chronic *Bright's disease is the one already slightly alluded to above,* that the disease is apt to run a more or less latent course or at any rate to produce such apparently trivial symptoms as to escape notice until the final uræmic manifestations. This is very different from what occurs in the other variety of Bright's disease where dropsy is such a marked sign and it is sometimes difficult to make patients in whom this variety of the disease is recognised as a result of complete examination to realise the gravity of the condition. The uræmic symptoms are not only very commonly present but they are the usual cause of death in other words, the acute form complicating this variety of Bright's disease is of far more serious import than the acute uræmia complicating other varieties of renal disease as for instance, acute nephritis or acute Bright's disease.

There are not only these marked differences in the clinical symptoms present in the two forms of chronic Bright's disease but the urine also presents characteristic differences in the two conditions. In that form of Bright's disease associated with dropsy the urine is necessarily diminished in quantity and contains a variable but usually large amount of albumin together with a considerable variety of casts. In the second form of chronic Bright's disease the volume of the urine is not only not diminished but is very commonly above the normal resembling in its quantity that seen in the true granular kidney. The specific gravity is low but the amount of albumin is very considerable amounting to a quarter or a third or even to a half. Casts are present of the hyaline and granular varieties but not necessarily so abundant as those seen in the other form of the disease. So far as my experience goes this form of Bright's disease is the one where there may be the maximum *loss of albumin inasmuch as there is not only a con*siderable percentage of albumin in the urine but the quantity of the latter may be increased and thus though the percentage quantity of albumin present be less than that seen in the large white kidney the total daily loss is greater owing to the great difference in the quantity of urine excreted in the two conditions. The combination of abundant or even increased excretion of urine containing a moderately high percentage of albumin is no doubt, the reason that many look upon the condition as one of the red granular kidney complicated by the supervention of acute or subacute nephritis but we have already seen anatomical reasons for not accepting this conclusion.

This second form of chronic Bright's disease then is characterised by its tendency to occur in the young by the excretion of an abundant highly albuminous urine by the clinical course being either a latent one or else one where the main symptoms may be said to be those of disturbance of nutrition and most important of all by the terminal illness being of a sudden onset and characterised by the predominance of uræmic symptoms. On post mortem examination in the second variety of the disease the contracted white kidney is found. The course of the illness in this variety of Bright's disease is not only apt to be latent but very frequently these patients state that they have never suffered at any time in their life from dropsy and this to my mind is one of the main reasons for thinking that the condition is not *necessarily the sequel of the large white kidney.* In fact in the typical forms of the disease occurring especially in young women I very much doubt whether it has any relation at all to the large white kidney. It must however be admitted that we sometimes see patients dying from uræmia without the presence of dropsy where in the past dropsy has been present and in such patients chronic diffuse nephritis resembling that seen in the large white kidney may be found with perhaps rather more overgrowth *of the interstitial* fibrous tissue. Such cases however both in their clinical history and in their morbid anatomy, are not precisely *the same as those with which we are now* dealing and as has already been mentioned it is definitely known that the large white kidney may remain a large white kidney for many years. I think therefore it may be stated confidently that the contracted white kidney both from the clinical study and from the study of morbid anatomy, is not necessarily the sequel of the large white kidney.

No support is afforded by the study of the clinical symptoms to the idea that the contracted white kidney is a red granular kidney in which subacute or acute nephritis has occurred. The red granular kidney produces *fairly typical clinical* symptoms in that it occurs in elderly patients and cardio vascular symptoms form a marked feature of the illness and there is a far greater tendency for the disease to destroy life by the occurrence of such complications as cerebral hæmorrhage and for the occurrence of uræmia. It is quite true that sometimes the sudden occurrence of uræmic symptoms suggests the onset of an acute complication, but still it is characteristic for acute symptoms to arise in many chronic diseases and even to be fatal without the onset of any such acute complication. This, for instance, is seen especially in diabetes and in hepatic cirrhosis. Acetonæmia in the one and cholæmia in the other, it would seem, may occur as a result of the progressive destruction of gland tissue. In these cases of contracted white kidney the urine at the time of the occurrence of the fatal uræmia does not present any changes that could be looked upon as indicative of acute nephritis. It is by no means uncommon for large quantities of urine to be excreted during the uræmic period, although perhaps it is more usual for the quantity to be diminished. The urine is not necessarily more albuminous during the terminal stages of the illness than at earlier periods. It would seem, therefore, from the study of the morbid anatomy, from the course of the clinical symptoms, and from the characters of the urine that the contracted white kidney is a distinct entity and not necessarily related to the large white kidney or the true granular kidney. One of the remaining problems is to consider the relationship, if any, existing between this form of Bright's disease and acute affections of the kidney, such as acute nephritis or acute Bright's disease. There can be no doubt that both acute nephritis and acute Bright's disease may occur in patients who subsequently may suffer from Bright's disease in one or other of its forms, and it would be rash to deny that the contracted white kidney may sometimes have that origin. It is, however, quite certain that it may occur in persons who have never suffered from dropsy and who have never been laid up by any serious illness and it is difficult to suppose that in all these cases acute nephritis has really been present at some antecedent period and has not been recognised. Not only may no history of acute nephritis or acute Bright's disease be obtained but sometimes no history of the acute specific diseases which are the more potent causes of the renal complications can be elicited and my own feeling is that not uncommonly this form of Bright's disease may arise independently and be slowly progressive and that it is not necessarily the sequel of an acute renal infection although it is very probable that in some instances it is.

ON DIAPHRAGMATIC HERNIA OF THE STOMACH AND ON TORSION OF THE SMALL OMENTUM AND VOLVULUS OF THE STOMACH IN ASSOCIATION WITH IT.

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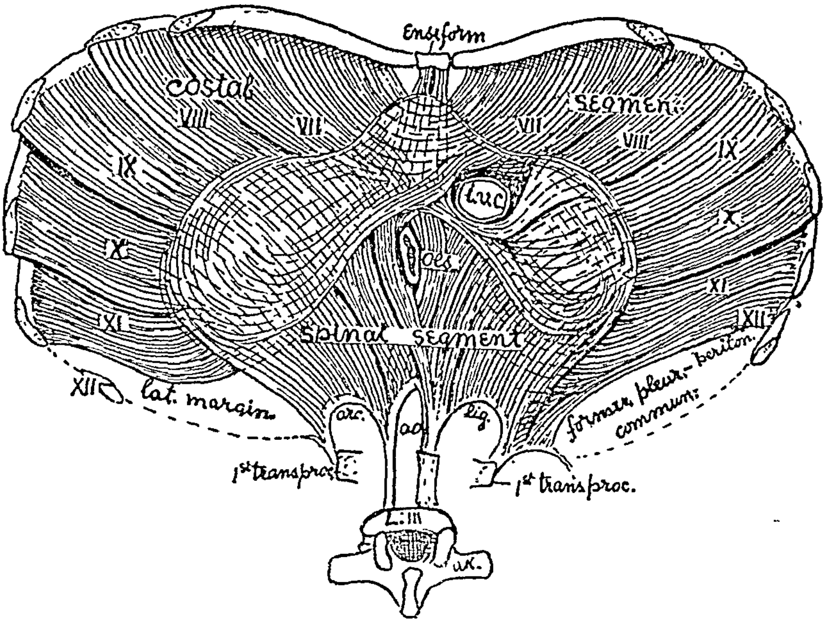
A GASTRIC hernia is usually diaphragmatic. It is exceedingly rare for the stomach to be found in any of the more usual forms of external hernia, if post-operative ventral protrusions occurring above the umbilicus be excepted. But hernia of the stomach constitutes a very considerable proportion of all cases of diaphragmatic hernia and the relations of the viscus to that structure are a sufficient explanation of its relative frequency. The object of the present paper is to consider the various conditions that are met with when the stomach is engaged in such a hernia. It is based upon material derived from 63 cases.

Diaphragmatic herniæ are of three kinds: (1) congenital; (2) traumatic; and (3) acquired.

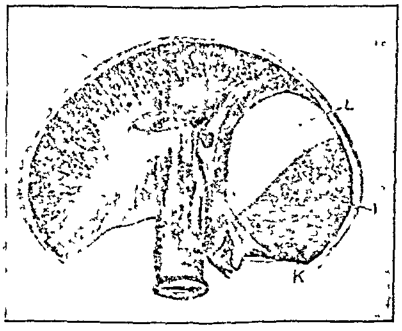
1. *Congenital.*—Congenital cases are always due to apertures in the diaphragm resulting from imperfect development. The nature of the diaphragm has been discussed by Dr. Arthur Keith in his recent Hunterian Lectures on Enteroptosis.* He points out that "in structure, in development, in evolution, and in action the diaphragm is a true digastric muscle made up of two segments—a spinal or dorsal and a costal or ventral." In man with the assumption of the erect posture the spinal segment spreads out laterally until the spinal and the costal segments almost meet (Fig. 1). In many subjects there is a fibrous interval between the origin and insertion of the diaphragm and this interval marks the site of the original communication between the pleural and peritoneal cavities and also the outer or lateral margin of the muscle. Dr. Keith states in The Lancet of March 7th, 1903, p. 635, that "congenital diaphragmatic herniæ occur between this lateral margin of the diaphragm and the costal wall and in such cases the free lateral margin of the diaphragm can be seen very distinctly." No doubt this explanation is the correct one in many cases, for instance, in those—not infrequent—in which the diaphragm is stated to have been deficient or absent on the left side (see Fig. 2)

Fig. 1.



The diaphragm spread out and viewed on its thoracic aspect. Fibres pass through the central tendon and unite the muscular fasciculi of the spinal segment to those of the costal segment. (From The Lancet of March 7th, 1903, p. 635.)

Fig. 2.



Large oval deficiency on the left side of the diaphragm in a case of congenital diaphragmatic hernia. (From Dr. Thomas Balfour's paper, *Edinburgh Medical Journal*, vol. xiv., p. 885.)

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* The Lancet, March 7th and 14th, 1903.

and in one (54) in which there was a fissure between the central tendon and the cartilages But not every protrusion takes place external to the lateral margin In one the anterior portion of the diaphragm behind the sternum and the cartilages was deficient and a gap existed bounded by a tense lunar arch (48) In other cases the aperture was in the tendon

In stomach hernia the gap is in most cases on the left side but in three instances it was on the right and the presumption is, when it is not definitely stated, that the protrusion occurred into the right pleura (33, 50, 58) Of 24 congenital cases four were met with in fœtuses, five in children who died at birth, and 15 in persons whose ages varied from six weeks to 60 years

2 *Traumatic* —Of 21 cases of stomach hernia following injury seven were due to wounds, seven to crushes, six to falls, and one to "being run over" The wounds were either stabs, sword or bullet injuries Of the crushes two were "buffer accidents" and the falls were usually from a height In every instance there was an aperture and this was more frequently situated in the tendinous than in the muscular part of the diaphragm and rarely near the origin of the muscular part from the ribs In cases where the patients died soon after the injury the opening was of the nature of a tear or rent, but if the sufferer lived for some years it became a well defined aperture, sometimes with rounded, smooth, and callous edges, and not infrequently there were adhesions in its neighbourhood between adjacent parts or the viscera engaged in it The diaphragmatic wound was never fatal *per se* and the patient not infrequently survived unless there were associated injuries of a grave character

3 *Acquired* —The existence of a sac has been held by the writer to be conclusive evidence that the rupture has been acquired Eight cases fulfil this requirement Three found their way into the right chest (6, 36, 63) and four into the left (23, 31, 32, 61) The eighth case was the remarkable one recorded by Dr Bright (9) in which a membranous sac bulged into both right and left chest (Fig 3) It was

FIG 3.

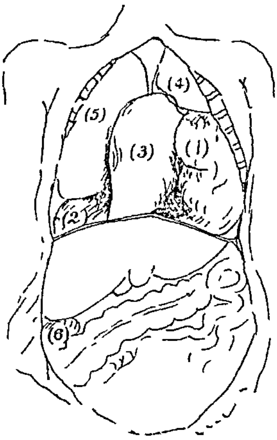

Diagram in connexion with Dr Bright's case 1 Larger portion of stomach 2 Smaller portion of stomach 3 Heart in the pericardium 4 Left lung 5 Right lung 6 Distended pelvis of right kidney (From Guy's Hospital Reports)

thought to
diaphragm,
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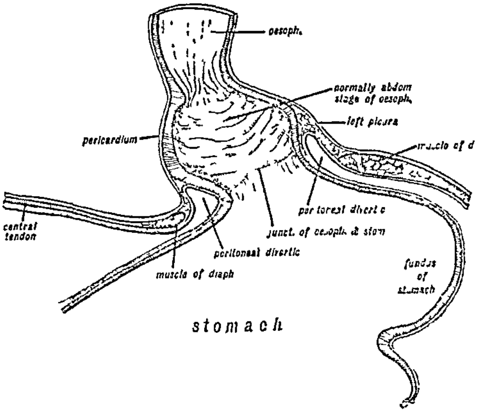
incorrect
which no statement is made as to the existence of a sac, but since the hernia took place through a dilated œsophageal opening in each case there is a strong presumption that both were acquired In another instance (44) the hernia passed through a dilated œsophageal opening Apparently there was no sac but the symptoms dated from a time when the patient "felt something rip in his inside" whilst lifting a pig of iron Lastly, there is a form of hernia of the stomach through the œsophageal opening, of which Dr Keith and Dr Rigby have recorded an example Here, owing to the descent of the diaphragm from the giving way of its supports, the cardiac orifice of the stomach comes to lie within the thorax and above the level of the muscle (37). (Fig 4) In all,

FIG 4



An example of diaphragmatic hernia of the stomach in a case of ptosis (From the proceedings of the Anatomical Society of Great Britain and Ireland and published in THE LANCET of March 7th 1903)

therefore, there were 12 cases of acquired hernia and it is of much interest to see how they were associated with certain natural weak places in the diaphragm In no less than eight (6, 21, 34, 35, 37, 44, 61, 63) the protrusion was either through, or doubtless determined by, the œsophageal aperture

Long ago Dr T Balfour pointed out that even when no hernia existed these natural foramina were occasionally found of unusual size The œsophageal foramen particularly seems to predispose to rupture and were it not that gravity exercises a contrary influence it would probably be met with oftener Indeed, its more frequent occurrence in quadrupeds has been attributed by Sir Astley Cooper to the position of their bodies There is also a weak spot on either side of the origin of the muscle from the ensiform cartilage, between that and the costal origins This gap in the muscle (Fig 1) is perforated by the superior epigastric branch of the internal mammary artery and in one case (36) the hernia followed this path It may be added that herniæ, though not of the stomach, have been known to take place through the opening transmitting the splanchnic nerve

Hernia of the stomach may be (1) complete, (2) incomplete, (3) partial or a Richter's hernia, and (4) associated with other viscera

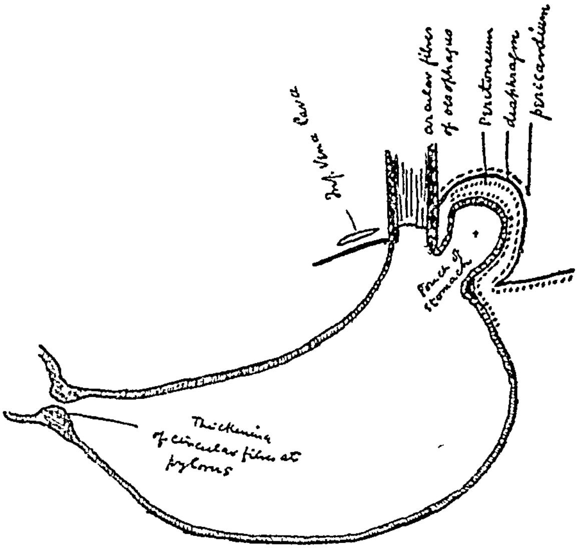
1 *The complete form* —Of this there is not much to be said The whole stomach has passed out of the abdomen into the sac or the thoracic cavity With it there is certain to be more or less of the omentum and it may be a small portion of the duodenum The greater curvature has in some cases been said to lie uppermost

2 *The incomplete form* —In incomplete hernia of the stomach the pyloric extremity is most frequently protruded, occasionally the cardiac end, and sometimes the middle portion of the viscus The whole lumen, however, is engaged

3 *Partial or Richter's hernia of the stomach* —Here the hernia is formed by a pouch-like projection of the stomach wall and does not include the whole lumen Only two instances have been met with and in neither is there any clinical history One is recorded by Dr. C. F Andrew "A dome shaped pouch of the diaphragm existed immediately to the left of the œsophageal opening and into it a portion of the cardiac end of the stomach, measuring vertically about an inch, was drawn The hernia could easily be pulled down and the part of the stomach wall that lay against the neck of the pouch was thickened" The condition was found in the dissecting room in a female subject and had probably caused

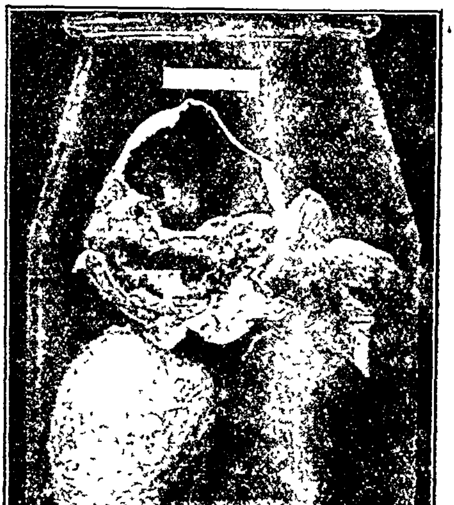
no serious trouble during life (31). (Fig. 5.) The other is a specimen in the Guy's Hospital Museum, No. 1088. A pouch formed from the greater curvature has passed through an aperture in the diaphragm and has evidently been strangled and the cause of death (39). (Fig. 6.)

FIG. 5.


Inf. Vena Cava
circular fibres of oesophagus
Peritoneum
diaphragm
pericardium
Pouch of stomach
Thickening of circular fibres at pylorus

Stomach, showing diverticulum of cardiac end in the pouch of the diaphragm. (From THE LANCET of March 21st, 1903, p. 792.)

FIG. 6.



Guy's Hospital Museum, No. 1088. Diaphragmatic hernia. A portion of the diaphragm with the stomach and spleen mounted to show a smooth edged perforation of the diaphragm, measuring about two inches in diameter, through which part of the stomach and great omentum have passed into the thoracic cavity and become strangulated. Below the diaphragm the stomach is seen with its lesser curvature and its œsophageal and pyloric orifices directed downwards.

4. *Diaphragmatic hernia in which the stomach is associated with other viscera.*

Table showing the Various Associated Viscera in the Herniæ.

1. Stomach only	9 cases.
2. Stomach and part of duodenum	3 ,,
3. Stomach and omentum	5 ,,
4. Stomach and spleen	3 ,,
5. Stomach, spleen, pancreas, and colon... ...	5 ,,
6. Stomach, spleen, and transverse colon... ...	6 ,,
7. Stomach and colon	22 ,,
8. Stomach, liver, and small intestine	3 ,,
9. Stomach, spleen, liver, omentum, and small intestine (part)	2 ,,
10. Almost all abdominal viscera...	1 case.

Some interesting facts are brought out by this table. The colon, the spleen, the pancreas, and the liver are the viscera most likely to be found associated with a stomach hernia. The colon was met with 33 times, the spleen 16, and the pancreas five. The stomach was alone with the colon in 22 cases and alone with the spleen in three but the spleen and the colon were together in 11. In every case in which the pancreas was found the spleen and part of the colon were also protruded. The frequent presence of the colon, spleen, and pancreas is not to be explained by their proximity to the aperture but to their close anatomical connexions with the stomach. Thus the colon follows the stomach because it is dragged after it by the gastro-colic omentum. The cardiac end of the stomach when it leaves the abdominal cavity pulls the spleen in its wake by the gastro-splenic omentum and the vessels and fascia which it incloses, and the pancreas follows owing to its connexions with the splenic vessels and the subperitoneal fascia which accompanies the vessels into the different viscera. Consequently, as might be expected, the spleen is more frequently present than the pancreas, but the pancreas is never found without the spleen. The pancreas is the one abdominal viscus that has the credit of never having been found in a hernial sac. It may still continue to hold this record, for in all five instances it had passed through apertures or large gaps. The liver was present in all in seven cases.† The gap is usually considerable when the liver is present, but though the close proximity of the liver to the gap cannot be overlooked yet it is probable that the traction exerted upon it by the gastro-hepatic omentum is a more determining cause. The presence of the small intestine, with the exception of the first part of the duodenum, is more accidental.

PREDISPOSING AND EXCITING CAUSES.

There is nothing to add to what has already been said about congenital apertures except that in one instance (23) the defective development was attributed to "maternal impression" in the early weeks of pregnancy. The causes of traumatic cases have also been considered. In the acquired the natural foramina are an obvious predisposing condition and muscular exertion is a frequent exciting cause. Thus in the case of a weakly child (6) a severe attack of vomiting lasting several days probably induced the rupture. In another (32) excruciating pain in the left hypochondrium came on during a violent effort to escape a blow and was followed by symptoms which ended in death. In a third (11) the patient was seized with a paroxysm of coughing whilst attempting to lift a pig of iron and felt something "rip in his inside." He died five days later from strangulation of the protruded viscera. In Dr. T. Churton's and the writer's case symptoms of stomach trouble became manifest a few months after a confinement (63). There is another case (19) in which the symptoms dated from a long and tedious confinement, but a few months before the patient had received a stab which most likely wounded the diaphragm. In the interval she had recovered from the injury and had enjoyed her usual health.

In one of the congenital cases, too (15), symptoms developed after a fit of crying and the infant, who had been in perfect health before, died in 24 hours. Lastly, there is the negative pressure within the thorax during inspiration to be taken into account. This is of most importance when a hernia has already formed and one of the lungs is more or less compressed and incapable of expansion. Under such conditions it would tend to prevent spontaneous reduction of a protrusion which might in many instances occur under the favouring influence of gravity. This influence must in diaphragmatic hernia be a powerful one, as a moment's consideration of the ease with which many inguinal and femoral herniæ disappear in the recumbent posture will show. Consequently some idea may be formed of the effect likely to be exerted by the thoracic aspiration.

SYMPTOMS.

In a condition in which not only the alimentary canal but the lungs and heart are likely to be incommoded seriously very varied symptoms may be anticipated. But various and irregular as they are, yet the majority fall naturally into one or more of the following groups: (1) dyspnœa; (2) dyspepsia; (3) obstruction and strangulation; and (4) tetany. In a few cases there were no symptoms referable to the hernia (21, 38, 40) *and one case at least was found unexpectedly* (41) Great thirst has several times been noted but there was always some serious complication in the shape of other injuries or a mortal consequence of the rupture (1, 7, 24, 26)

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† This does not appear from the table but in addition to the five cases mentioned there the liver was found in one of the spleen cases and in another where the spleen and pancreas were present.

1 *Dyspnœa* —Respiratory difficulties are very common
They may be
upon the heart
other may be c
stomach hernia the left side is nearly always affected most likely both take a share In one case in which the hernia was on the right side there was no complaint of difficulty of breathing Difficult breathing in some instances is constant and may last for years *Sometimes there is a liability to* sudden attacks at intervals More often it is brought on by exercise or going upstairs, after a full meal or when food disagrees, though ' the asthma ' of one patient was relieved when he ate In more than one case in which respiration was embarrassed there was lividity In one (2) the face would become livid during the attack and in this and another the dyspnœa ended fatally (32)

2 *Dyspepsia* —Where the hernia is chronic there is often a history of discomfort and vomiting after meals and sometimes of pain These symptoms are probably induced by the difficulty in the propulsion of food from the stomach and are associated with dilatation of that viscus, often extreme which is frequently described in *the records of the* cases

3 *Obstruction and strangulation* —The dyspeptic symptoms are only the earlier signs of obstruction which is incomplete and varying in degree, but they are very liable sooner or later to culminate in an acute attack of complete obstruction in which violent or excessive vomiting, often without retching, is accompanied by pain and constipation and terminates life in a few days It is probable that in many *of these cases a certain degree* of strangulation is present and that they gradually merge into that class of case in which there is very definite interference with the circulation

Lack of precision in description of the necropsies makes it impossible to form any real idea of the frequency with which strangulation occurs but there can be no question *that strangulation* was *the cause of death in at least* seven cases (10, 18, 43, 44, 52, 61, 63) and it is more than probable from the severity of the symptoms that it was present in six others

4 *Tetany* —In view of the attention that has been attracted of late to the association of tetany with gastric conditions the following brief report of a case under the late Sir Russell Reynolds (18) of diaphragmatic *stomach hernia* is of more than passing interest

CASE 1 —A woman, aged 29 years, had been stabbed about the seventh rib on the left side some seven years before admission to University College Hospital Though the lung was wounded she recovered good health Then she had a long and tedious confinement and never recovered strength suffering from repeated vomiting after taking food This state of affairs had gone on for six years She remained in hospital *nearly five months* without any *great change* On March 29th she was flushed and uneasy On the 30th contractions of the muscles of the forearms and arms were noticed The hands were adducted, the fingers and forearms were flexed, resisting extension and the patient could not move them Then she became unable to open her mouth and had pain in the back and mouth *The temperature* was 103 6°1 In four hours from the commencement of the spasms she died in a state of general tonic spasm At the post mortem examination the whole of the stomach with the exception of a small portion at the cardiac end was found to be displaced *together with several inches of the transverse* colon and some omentum into the left thoracic cavity through an opening near the left edge of the central tendon of the
diaphragm The hern had
displaced the heart to con
striction at the neck and
below the diaphragm

PHYSICAL SIGNS

The physical signs are very indeterminate This is only what might be expected when it is remembered that a correct diagnosis has rarely been made before a post mortem examination Signs, indeed, are often marked but the difficulty lies in their interpretation They may be divided into *(1) those of prime importance* and (2) *those of* subsidiary value

1 *Signs of prime importance* (*a*) *Stomach or intestinal noises in the chest* —The uncertainty in connexion with this sign lies in the possibility of the sounds being 'transferred " Coupled with other signs, such as absence of respiratory *murmur*, it may be almost diagnostic and, indeed it would appear that in some of the very few cases in which a diagnosis has been made during life it has been by the importance attached to them (84)

(*b*) *Intestinal peristalsis communicating writhing movements to the chest wall* —Such a sign would be of the utmost value if it were of frequent occurrence It has however, only been noted once (Holt) and in the case of a child (46) It is obvious that for it to occur the chest wall must be very supple and therefore it is only in the case of an infant that *there would be a possibility of it being seen* It was due to the intestines in Holt s case but there is no reason why stomach contractions should not be visible under similar suitable conditions

(*c*) *Displacement of the heart to the right side* —As a very large majority of all stomach herniæ occur into the left chest this is of frequent occurrence It is, of course only of value when joined to other signs

(*d*) *A respiratory bruit* In one case (Case 2, *infra*) there was heard over the left lower ribs in the posterior axillary line a peculiar blowing sound which was evidently connected with the respiratory movements Had it been *heard in the upper part of the chest it would have been* described as amphoric One auscultator described it as
e others who listened it was a
was not grasped at the time
t at the necropsy its explana
tion was obvious It was produced by the forcing of gas during expiration from the herniated portion of the stomach *into its abdominal portion through the narrow orifice caused* by the constriction at the neck of the sac It is hardly likely to occur with any other part of the alimentary canal than the stomach and with that only when a considerable portion lies in the thorax and another large portion in the abdomen It implies the existence of a patent communication between the two portions at the neck of the sac and consequently the absence of strangulation *by the neck* is a fair inference Its importance therefore, when strangulation exists will be seen when volvulus of the stomach and torsion of the small omentum are discussed for the latter of these conditions was present in the case in which it was heard

2 *Signs of subsidiary value* —(*a*) Absence of breath sounds (*b*) alterations in resonance, (*c*) changes in shape and deficient movement of the side of the chest in which the *hernia is situated* (*d*) sinking in of the epigastrium, and (*e*) inability to lie on the opposite side Of most of these it may be affirmed that they vary in degree, are by no means constant and are only of practical use as an aid of more or less value in the interpretation of some of the more important signs mentioned above

PATHOLOGY

1 *Adhesions* —Adhesions in the absence of strangulation are not very common *When they do occur they are usually* omental and in the vicinity of the aperture

2 *Chronic ulcers* —In one case (1) in which the condition had existed for years there were two or three deep chronic ulcers

3 *Distension of the stomach* —This is often present and in some cases is enormous Especially does it *seem to have* called for comment in those cases in which obstructive symptoms were present but the latter were not necessarily associated

4 *Accidental perforation* —Distension may lead to thinning of the stomach wall *and has enabled a trivial* accident to produce perforation and the extravasation of the copious contents *into the pleural cavity In the case in* which this happened hæmorrhage was found to have taken place from a vessel which opened upon the perforation (1)
differ little from the
circumstance of the
pleura that cavity
and a considerable

lation of the stomach seems to be different *from ulceration in strangulation of the* intestine In the latter it begins on the mucous surface and extends to the outer coats In the case of the stomach the available evidence points to extreme distension producing splits through the peritoneal and muscular coats, perforation being staved off for a time by the integrity of the sodden and rotten mucous membrane (61). Further, ulceration does not appear to have been noted at the seat of constriction, the most common place for it in the intestine.

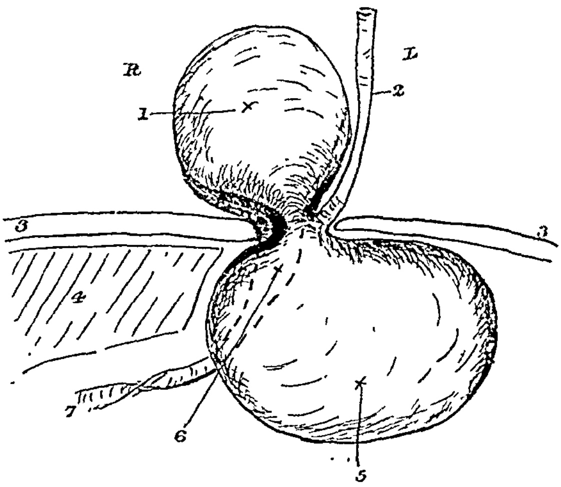
6. *Strangulation by volvulus of the stomach or by torsion of the small omentum.*—There is one form of strangulation of the stomach met with in diaphragmatic hernia of that organ which presents unusual pathological peculiarities and which has not hitherto received any attention. It may be thought that strangulation of the stomach by volvulus is rather a far-fetched idea, but it undoubtedly does occur and my attention was first directed to it by a case in which the post-mortem appearances were most unusual and their explanation apparently very difficult. Subsequently he met with a case which had occurred at St. Bartholomew's Hospital in which presumably identical appearances had been found, and from a careful consideration of the two cases the conclusion was reached that both owed their peculiarities to twists by which certain vessels in the small omentum were affected and that the engagement of a portion of the stomach in a hernial orifice in the diaphragm was a feature essential to the condition. For permission to include the St. Bartholomew's Hospital case I am greatly indebted to Mr. A. Willett under whose care the patient was admitted and to Mr. James Berry who made the post-mortem examination.

CASE 2. *Diaphragmatic hernia of the stomach; torsion of the small omentum; strangulation; death.*—A female, aged 29 years, was admitted into the Leeds General Infirmary under the care of Dr. Churton on Feb. 19th, 1901. Three months after a confinement and 18 months before admission she began to have dyspeptic symptoms. Later, vomiting after food set in and continued throughout another pregnancy which terminated without difficulty on Dec. 8th, 1900. Shortly afterwards streaks of blood occurred in the vomit and continued when the patient was not under treatment. On Dec. 15th she was poulticed for acute pain under the left shoulder. The patient was a pale and delicate looking woman and when admitted weighed 6 stones 11 pounds as against 8 stones 7 pounds two years before. Nothing abnormal was detected in the lungs. Both sides of the chest moved equally. There was a good entry of air. The percussion note was good and tactile vocal fremitus was normal. The heart's apex was felt in the fifth left interspace two and a quarter inches external to the middle line and the pulse was regular and 84. The bowels were difficult to regulate. Under a milk diet the vomiting ceased. On Feb. 21st she was allowed beef, potatoes, and rice pudding for dinner; indigestion followed and the pain became worse at 7 P.M. She vomited. At 10.30 P.M. she was much worse and collapsed, with cold hands, great pallor, and a very feeble pulse of 120. Pain was felt in the epigastrium, the left hypochondrium, and across the body over the lower ribs. Liver dulness was uncertain. There was no marked abdominal distension but there was some rigidity over the epigastrium. Respirations were increased (27) and the entry of air into the left lower lobe was decidedly diminished. Over the last four or five lower ribs on the left side in the posterior axillary line an extraordinary sound like gas or air blowing into a cavity was heard during expiration. One observer described it as "bubbling." The patient was suspected to be suffering from gastric ulcer and the rapid development of these very acute symptoms was thought to point possibly to perforation. Under this impression I was asked to see the case with Dr. Churton and though the patient's condition was extremely bad it was felt that an operation should be performed. Ether was accordingly administered and transfusion was immediately commenced. The abdomen was opened by a median incision above the umbilicus. The left lobe of the liver descended to within one and a half inches of the umbilicus. The stomach could not be seen. The colon was empty. The spleen and portion of the pancreas were easily brought into the wound. Underneath the liver, where the stomach should have been, there lay a mass of omentum which could not be drawn away. Covered by this and placed deeply near the back of the liver a very tense, globular tumour was felt. It was fixed. On teasing through the omentum it was seen to be the stomach, tightly distended, and of a bluish grey colour, and with several peritoneal lacerations of considerable size. The finger could be passed over a considerable portion of its surface without encountering any impediment. A stomach-tube was passed. The tumour disappeared at once and it was only by the presence of the tube that the whereabouts of the stomach could be detected beneath the omentum. Though there was a momentary improvement in the pulse on the relief of the distension the patient's condition rapidly began to fail and it became obvious that she could not bear the prolongation of an operation in which grave complications were certain. The abdomen was therefore closed. Five pints of saline solution had been injected into the median basilic vein. Death took place two hours later.

Necropsy.—When the body had been opened a large tumour was seen to exist in the right thorax in close contiguity with the pericardium. The tumour was the sac of a diaphragmatic hernia, was tightly distended, and as large as a very big cocoanut. It was surrounded by the lung which had been hollowed out like a cup by the tumour projecting into its base. This cup-shaped depression in the lung was the result of adaptation, not compression. Below the diaphragm and coming from behind the left lobe of the liver, which was tilted forward, was another tumour as large as that in the right thorax and tightly distended. This tumour, composed of the cardiac extremity of the stomach, was bluish in colour, deeply congested, and showed several large peritoneal cracks. The pylorus and first part of the duodenum were found on the right side of the tumour posteriorly and were quite normal in appearance. They could be traced to the diaphragm. The hernia was now reduced. The contents consisted of a small portion of the great omentum and the middle two-fifths of the stomach distended with fluid and gas. The portion that had lain within the sac was normal in colour and appearance. It was marked off from the pyloric portion, which remained in the abdomen, by a pale crease, but evidently there had been no interference with the circulation produced by the constriction of the neck of the sac.

On the other hand, there was a very sharp line of demarcation between the herniated portion and the cardiac extremity which had constituted the tumour in the abdomen. The latter showed marked signs of strangulation. Both surfaces of the fundus presented considerable peritoneal ruptures, which in some instances extended through the musculature and exposed the rotten mucous membrane. One of these perforated notwithstanding the care taken in the examination of the organ. On the internal surface of this portion of the stomach there was a hæmorrhagic erosion in addition to deep congestion and softening of the mucous membrane. The mucous membrane of the herniated portion showed nothing abnormal. The protrusion had taken place through the œsophageal opening and on the right of the gullet. It had passed behind the pericardium and, carrying before it the peritoneum continuous with the anterior surface of the gastro-hepatic omentum, it had received an additional covering from the right pleura. The sac was

FIG. 7.



Diaphragmatic hernia of the stomach. Strangulation of the cardiac end from torsion of the small omentum. The hernial sac has been omitted. R, Right chest. L, Left chest. 1, Central portion of the stomach contained in hernial sac. 2, Œsophagus. 3, Diaphragm. 4, Liver. 5, Cardiac end of the stomach. 6, Pyloric end of the stomach (concealed). 7. Duodenum.

pedunculated and on its mediastinal side it had contracted an adhesion to the lung. Beyond the mobility of the spleen and pancreas no other abnormality of importance was found. (Fig. 7.)

CASE 3. *Diaphragmatic hernia of the stomach; volvulus of the stomach; strangulation; death.*—A man, aged 50 years, was admitted into St. Bartholomew's Hospital on Oct. 19th, 1897, under the care of Mr. Willett, in a state of profound collapse and died on the stretcher as he entered the ward. He had suffered from severe abdominal pain and almost continuous vomiting for four days until relieved by morphine. When admitted he was quite conscious and the abdomen was distended in the upper half and not tender.

Necropsy.—The post-mortem examination was made by Mr. Berry. The left lung was much shrunken and occupied only the upper half of the left pleura. There were no adhesions. Bulging into the left side of the chest and covered by normal pleura was a large nearly globular sac measuring between four and five inches in diameter. It had a broad pedicle at the inner and lower part and was clearly a diaphragmatic hernia. "Abdomen.—The peritoneal cavity contained free gas. The lesser peritoneal cavity was greatly distended and filled with a thin, nearly black, fluid looking like altered blood. This sac formed a huge globular mass occupying most of the upper quadrant of the abdomen. The transverse colon ran across the lower part." "The stomach was remarkably abnormal in shape and position. About one-half of it—the cardiac end—was greatly distended, forming a rounded sac some six inches in diameter. This portion bulged into the lesser peritoneal sac above mentioned At the lower border was a small perforation through which blackish fluid mixed with particles of food was oozing into the peritoneal cavity. A fairly well-marked and evidently old constriction separated this half of the stomach from the pyloric half which lay in the hernial sac. Nothing else but stomach lay in this sac and there was no inflammation, congestion, or other sign of strangulation. There was no fluid in the sac. When the pyloric half was drawn out of the sac the whole stomach was seen to be enormously dilated and the lesser omentum was greatly widened, being seven inches across at its widest part. A constriction at the pylorus marked the lower limit of that part that had been in the sac. The cardiac portion of the stomach was considerably decomposed and it was difficult to say whether the perforation was ante or post mortem. It seemed probable, however, that it had occurred a few hours before death on account of the large quantity of fluid distending the lesser peritoneal sac." "Diaphragm.—The opening in the diaphragm through which the hernia occurred was oval or nearly round and measured about two inches in diameter. It was situated just to the left of the œsophageal opening, the herniated portion of the stomach passing in front of the œsophageal end before entering the hernial sac. (Fig. 8.) The hernial opening appeared to have been congenital and the stomach had evidently been in the habit of passing freely into the sac for a long time. It was easily reduced by pulling and had probably often been spontaneously reduced. There was no sign of old injury to ribs, liver, diaphragm, or any other part." There was also a shrunken gall-bladder containing stones with some old adhesions around. There was no disease of any other abdominal viscus. (*Note.*—I assume that the condition of the cardiac end of the stomach described in these notes was due to strangulation.)

FIG. 8.

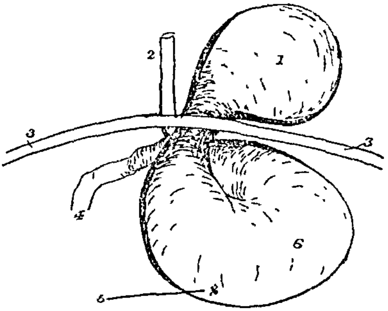
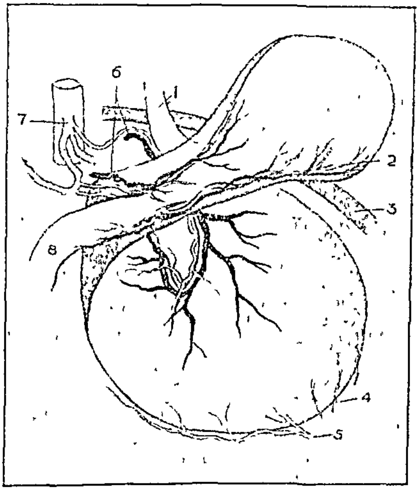


Diagram in connexion with Mr. Willett's case. Volvulus of the stomach. 1, Pyloric half of stomach in hernial sac. 2, Œsophagus. 3, Diaphragm. 4, Duodenum. 5, Perforation of (6) Cardiac end of stomach.

There is one remarkable fact common to these cases that cannot fail to arrest attention—viz., that strangulation affected a part of the stomach which had not entered the hernial sac, whilst the hernial contents themselves were quite normal and uninjured. Indeed, there was no real difficulty experienced at the post-mortem examination in expressing those contents in the first case and in pulling them out in the second. Obviously the conditions were unusual. What is the explanation? The most important factor is torsion of the gastro-hepatic omentum from right to left through an angle of 180°. It only requires a glance at Figs. 7 and 8 to realise that the right-hand portion of the small omentum must be pulled very much out of its natural position and have its relation to the left-hand portion very much altered. As a matter of fact, it is pulled across it at right angles The right-hand border, with the pylorus and duodenum attached, in its course to the aperture in the diaphragm lies superficial to the left-hand portion of the omentum and to the coronary artery and vein. In Mr. Willett's case it passed in front of the cardiac end of the stomach and a true volvulus of the stomach was produced, but *in Dr. Churton's and the writer's case, the hernial orifice* being on the right side of the œsophagus and not on the left as in Mr. Willett's, this crossing of the stomach did not occur, but as will be readily understood the torsion of the omentum would be more pronounced.

Now the reason why only the cardiac portion of the stomach, situated outside the hernial sac, shows the effects of strangulation is because the circulation through the coronary artery and vein is interfered with. These vessels pass underneath the right-hand portion of the omentum and the pyloric portion of the stomach and which constitute a firm solid band of tissues fixed at either end—on one side at its engagement in the hernial orifice and on the other at the attachment of the lesser omentum to the transverse fissure of the liver. The arrangement of the parts is diagrammatically represented in Fig. 9. When in these circumstances, the

FIG. 9



1. [illegible]

But in the two cases (2 and 3) the position of the parts was reversed

pedunculated and on its media E POINTS IN THEIR
an adhesion to the lung. Beyo D TREATMENT.[1]
and pancreas no other abnorr
(Fig. 7.)
CASE 3. *Diaphragmatic* ABRAM, M.D. LOND.,
the stomach; strangulatio IRMARY, LIVERPOOL; LECTURER AND
was admitted into St. Ba EDICINE, UNIVERSITY OF LIVERPOOL.
1897, under the care o
collapse and died on promotion to the senior staff of the
He had suffered f ases of heart trouble have come under
continuous vomitin wo cases were admitted moribund and
When admitted h xamination was obtained in either case.
distended in the
Necropsy.— examples of congenital disease; no points
Mr. B re noted. Mitral lesions were present in 39
only 13 presented the signs of stenosis in addition to those
adhes rgitation, and five, moreover, had definite evidence
cover erent pericardium. In 31 out of the 39 cases
meas was a definite history of rheumatism. In this
a bro three deaths occurred, two cases of regurgitation,
a dia 0 and 56 years, and one of stenosis, aged 21 years.
conte regurgitation was found in seven cases; three
diste se were under 30 years of age and had a definite
like of rheumatism; the remaining four were over 30
of age, two had suffered from syphilis, and two showed
l vascular degeneration. There was one death in
roup, a young woman, aged 29 years, who died
ly; a post-mortem examination was refused. Com-
ortic and mitral lesions were found in eight cases; four
history of rheumatism and four evidence of general
r disease. The vascular cases were all in males
40 years of age. There were two deaths in this
The renal cardiac cases embraced 16 admitted with
c symptoms due to chronic renal disease. Six
ese had on admission and discharge a mitral re-
ant murmur; three cases had a mitral systolic
ur on admission which disappeared and two had an
diastolic murmur on admission which disappeared.
deaths took place in this group all over 45 years of
Five cases of infective endocarditis came under notice;
ed and were confirmed by post-mortem examination.
ne of these the rise in temperature occurred irregularly
was only detected by taking the temperature every
o hours, an important point. In another stenosis
the pulmonary valve was found, the infective lesion
ing a patch of acute vegetative disease of the pul-
onary artery proximal to the bifurcation. This last
se apparently followed an attack of pneumonia, but the
nfective lesion was
ultivated from the
cases succumbed. I
mitral cases, nearly half the number, and the importance of rheumatism in their causation stand out prominently. These cases offer a wide field for discussion and if I must content myself with noting only a few points the limitation is made with good reason.

The possessor of a heart lesion may be absolutely unconscious thereof; on the other hand, he may present many symptoms which can usefully be classed as direct and indirect. In the former group we find various subjective sensations—palpitation, dyspnœa, and alterations in the cardiac rhythm; in the latter symptoms which for the most part are attributable to passive congestion of the various organs—lungs, liver, kidney, or brain. Yet another source, embolism, may give rise to symptoms far removed apparently from the primary lesion. It is unnecessary for me to detail the various symptoms but I shall touch upon a few to emphasise the difficulty which we shall often meet in our work.

Let us consider for a moment the subjective sensations that may be present. As you all know, they vary from the merest præcordial discomfort to the agony of angina pectoris. I should say that given a heart lesion the severity of the subjective trouble bears often absolutely no relation to the gravity of the lesion. The fatal case of aortic disease was attended with practically no pain at all. But a still more important point is this, even severe anginal pain causing collapse may occur without there being any actual heart lesion at all. These cases are not seen in my experience in hospital practice, they occur in better-class subjects, often neurotics, who are overworked, either mentally or physically. Close inquiry often elicits a history of irregular feeding and possibly excess in alcohol and tobacco, especially the latter. Rest, careful dieting, and a holiday work wonders. We are all familiar with the abnormal sensations in the chest due to gastro-intestinal disturbance and I have a vivid recollection of a patient in the ward of the late Dr. A. Davidson whose "mediastinal tumour" was removed by a few doses of Gregory's powder. A much more serious difficulty I can illustrate with a case.

CASE 1.—A man, aged 48 years, was sent to me for severe anginal attacks. His medical adviser failed to find any condition to explain them. I in my turn found the heart and vascular system quite healthy. The man was kept under observation and eventually definite evidence of nerve-root implication was obtained and finally the case was cleared up by the appearance of œdema of the left arm. A necropsy showed a malignant growth starting from the upper dorsal vertebræ.

Palpitation is another symptom which may be considered for a moment or two. Perhaps of all heart symptoms it is most often unaccompanied by heart lesions. Anyone conscious of his heart's action may be said to have palpitation; the heart's action may be unaltered or may be irregular. In either case careful attention must be paid to the apparent exciting cause. When due to severe exertion it is a physiological phenomenon, but when it appears with slight exertion some underlying state can usually be detected, such as neurosis, chlorosis, or heart trouble. It may also appear, apart from exertion, after the intake of food or emotional disturbance, and its association with gastric disturbance is well known. By far the most frequent variety is the nervous one, with a weak nervous system, whether inherited or acquired. Palpitation appears under the strain of the body changes at puberty and the menopause, or under physical or mental overwork. Similarly many cases of tea and tobacco palpitation have a nervous basis.

Is nervous palpitation due to sympathetic stimulation or vagus inhibition? In many cases it is impossible to say. In some, however, the associated vascular changes justify the implication of the former. Two cases will illustrate this.

CASE 2.—A young male neurasthenic came to the infirmary suffering from palpitation which I found to be associated with marked pulsation in the vessels, notably the abdominal aorta. This condition has been termed by Dana pulsating neurasthenia.

CASE 3.—In private I saw a young male adult who with severe attacks of palpitation had marked tachycardia and wasting. Three months' rest produced a complete recovery which has been maintained for over three years.

I always teach that the symptoms of chest mischief may be due to lesions of practically any of the thoracic organs, but it is also important to note that chest lesions may give rise to symptoms pointing elsewhere. I may be allowed to give some examples not limited to heart cases. Some years ago I collected a series of cases of pneumonia and found that one-third of the number began with vomiting. I should add that my cases were all adults. A striking case was in my ward last year.

CASE 4.—A man, aged 44 years, was admitted for cough and pain in the chest. He had suffered from a septic finger. The temperature was a septic one, a well-marked leucocytosis was present, and he had signs pointing to effusion in the left chest, deficient movement, absent vocal fremitus, dulness, and feeble bronchial breathing. A needle drew pus but operation found the pleural cavity obliterated. A necropsy a week later revealed a suppurating broncho-pneumonia secondary to an aneurysm pressing upon the left bronchus.

An important case with a direct bearing upon the point I wish to make is the following.

CASE 5.—A woman, aged 46 years, was sent to me with a history of hæmoptysis and some wasting. Her medical adviser had found evidence of consolidation at the apices. I corroborated his finding but discovered further that she had very definite mitral stenosis. No tubercle bacilli were found in the sputum and the further history has shown the lung lesion to be secondary to the heart state.

CASE 6.—Another case I well remember was sent for examination purposes some years ago as one of aortic aneurysm. I am happy to say that our Liverpool students who saw it recognised it as a case of fibroid contracting lung exposing a normal vessel.

A final case in this connexion:

CASE 7.—A woman, aged 27 years, was sent to my colleague, Mr. Rushton Parker, suffering from hæmaturia of recent appearance. No local pelvic cause was found and I was asked to see her. The onset had been attended by sharp pain in the loin and her heart showed definite evidence of mitral stenosis. The hæmaturia was then of embolic origin and disappeared after a week's rest in bed. I might say the patient was not aware of her heart trouble.

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[1] A paper read before the St. Helens Medical Society.

These are a few striking cases and I have no doubt you could multiply examples from your own experience. The point which I wish to make is then that nothing but a careful physical examination will enable us to disentangle the various chest lesions.

I have often been struck with the method of heart examination practised before inducing anæsthesia. An ear applied directly or with the aid of a stethoscope settles the question of heart soundness in an instant. The matter, however, is not nearly so simple. I suppose the diagnosis is based on the absence of a murmur with a regular rhythm. Now when valvular trouble is present good compensation makes it no bar to anæsthesia and in my earlier days I have given even chloroform in such cases without mishap. On the other hand, a murmur is not sufficient evidence of valvular trouble. It would lead me too far to discuss the whole question but I would remind you that a murmur depends largely upon the speed of the blood current. I am sure that some murmurs heard when the heart is beating very rapidly in excitable subjects are due to this factor alone. The opposite pole will be accepted, I think, by all—viz., that when the heart's action becomes weak murmurs often disappear; this I take it is the probable explanation of the murmur being absent in some cases of mitral stenosis. Again, when a murmur is present the question will often arise, Is it functional or organic? I am accustomed to teach that with no enlargement of the heart downwards or to the left, no accentuation of the pulmonary second sound, with the left ventricle first sound sharply defined, and a systolic murmur loudest at the pulmonary area, then in the presence of anæmia a diagnosis of hæmic murmur is justifiable. However, in some cases a mitral murmur is heard with an accentuated pulmonary second sound and yet we are in doubt. I have just had an interesting case in my ward which will show the difficulty that at times may arise.

CASE 8.—The patient was a girl, aged 19 years. She was anæmic but nutrition was fair. The temperature was 101° F., the respirations were 24, and the pulse was 110. There were some redness, tenderness, and swelling of the right foot. The blood count gave the following result: hæmoglobin, 60 per cent.; red cells, 4,800,000 per cubic millimetre. The apex beat of the heart was in the fifth space, three and a quarter inches from the median line; it was strong, regular, excited; the dulness was within normal limits. The left ventricle first sound was sharp and followed by a systolic murmur, which was not conducted to the axilla. The pulmonary second sound was accentuated.

It is generally accepted that some cases of functional murmur are heard best at the mitral area and if weakness of the muscle ring be accepted as the cause thereof the increase in the pulmonary second sound is readily explained. I decided in this case, although rheumatism was present, that the murmur was functional and I did so because the first sound was so well defined. Within a week the murmur had vanished, so that the diagnosis of relative incompetence was probably correct.

The variety of valvular disease in which murmurs are most often absent is mitral stenosis. The following considerations will guide us in such a case. 1. Evidence of an enlarged right heart: displacement of the apex beat to the left, systolic heaving of the sternum with epigastric pulsation, and extension of cardiac dulness to the right of the sternum. I assume that the lungs have been examined. 2. A diastolic shock in the third left space will give evidence of high tension in the pulmonic circulation. Good observers have stated that a presystolic shock can in some cases be made out in the upper and left part of the cardiac area. I cannot say that I have ever seen it and as it is ascribed to the pulsation of the auricle I do not expect to see it, for I have never made a post-mortem examination in which the left auricle has formed part of the anterior surface of the heart. 3. A presystolic thrill may be present even in the absence of a corresponding murmur. The shock of the closing mitral valve may be detected as an abrupt sensation synchronous with the first sound and by Bard and Cassan is considered to be an absolute sign of mitral stenosis. 4. The left ventricle first sound is often altered in characteristic fashion, becoming hard and sudden—I call it "thudding." At the base the pulmonary second sound becomes markedly accentuated and persistent reduplication of the second sound is a good sign of the lesion. 5. Preceding the first sound at the apex is sometimes heard a dull rumbling sound which may end in a murmur before the first sound becomes audible, the *roulement diastolique* of French writers. The pulse is usually small, regular, and of fair tension. I have a case in my female ward at the time of writing which shows practically all these points. Yet another case:—

CASE 9.—The patient, a female, aged 26 years, was in my ward in January, 1904, with mitral regurgitation. She was readmitted on March 20th with marked loss of compensation, as shown by œdema of the legs, some ascites, right hydrothorax, with orthopnœa and cyanosis. The mitral murmur was absent on admission but became audible in the course of 24 hours after a full dose of digitalis.

It is obvious, then, that th[illegible] examination is necessary to make an [illegible]est cases. The scheme which I adopt for the heart is the following:—1. Inspection of the præcordium. 2. Apex beat: position, extent, strength, character, rhythm, thrills, mobility, abnormal impulses. 3. Heart dulness: change of absolute dulness with full inspiration. 4. Heart sounds: strength, character, relative intensity, rhythm; added sounds. 5. Murmurs: site of greatest intensity, time, lines of conduction, and character. The examination is completed by the investigation of the arterial pulse, venous pulse when present, also liver and capillary pulses, and further assistance is obtained by considering the symptoms and physical signs in the organs secondarily affected. In this way we can usually determine the existence of a heart lesion, but, as Peter has well said, this is merely an artistic satisfaction; a musician could arrive thus far; it takes a sound medical practitioner to make a diagnosis on which prognosis and treatment may be based.

Time will not allow me to enter into the causation of heart disease but the nature of our problem may be illustrated by a case.

CASE 10.—A male, aged 50 years, was admitted into Ward X. for pain in the chest, dyspnœa, and cough. Physical examination detected an enlarged heart; the apex beat which was displaced downwards and to the left, was slightly diffuse, strong, heaving, and regular. There was some dulness in the inner part of the second right intercostal space. The left ventricle first sound was prolonged and muffled; the aortic second sound was musical and accompanied by a short "whiffy" diastolic murmur. The pulse was rather short (collapsing) and the radial artery was greatly thickened and tortuous. The diagnosis of hypertrophy of the left ventricle with a little dilatation, dilatation and atheroma of the aorta, and slight aortic regurgitation was readily made. It was further noted that the urine was of low specific gravity (1007), although deficient in amount, and contained a trace of albumin. The history revealed some renal dropsy, puffiness of the eyelids in the morning and of the ankles at night, of some duration, and, further, that for some years the patient had been obliged to get up at night to micturate. It was evident that the man had chronic renal disease and we had to decide upon the nature of the aortic valvular trouble. Murmurs in renal disease may be hæmic, due to relative incompetence, or the result of actual valvular changes. A diastolic murmur is practically never hæmic in origin, so that we were left with the two latter. It was quite possibly a relative murmur inasmuch as there was evidence of dilatation of the aorta but, so far as I know, there are no physical signs to help us in our decision. The course of the case will often decide and in this case it did so. The patient was kept in bed, his fluid intake was lessened, and in the course of a few days the murmur disappeared; it was therefore a murmur of relative incompetence and not one due to valvulitis.

It would be impossible to notice all forms of heart lesion in which difficulty arises but I should like to mention one other—viz., adherent pericardium. I do so for two reasons—one being its importance in prognosis and the other its bearing upon the diagnosis of mitral stenosis. This latter point was impressed upon my mind a good many years ago by the following case:—

CASE 11.—A young woman, whose age I have forgotten, was in the infirmary with evidence of heart failure, with presystolic thrill and murmur. Ascites was out of proportion to the œdema of the legs. She died and the post-mortem examination revealed general adhesion of the pericardium, with calcification and absolutely no mitral stenosis. The specimen is in the Liverpool University museum. Since that time I have learned to pay less attention to murmurs and more to the other signs of valvular trouble and it has repaid me.

The point which I want to emphasise is this. In a valvular case, especially one of apparent mitral stenosis, always look for the evidence of adherent pericardium and be cautious in affirming the presence of mitral stenosis when such evidence is present. Inflammation of the myocardium and pericardium, pancarditis, is much more frequent than is usually believed. In my opinion the diagnosis of adherent pericardium can only be made when there is thickening in the mediastinal tissue, mere adhesion of the pericardial layers [illegible] of any diagnostic value. It will [illegible] efore, what an important bearing [illegible] l have on prognosis. It is, however, often a difficult matter to speak positively about. The points are as follows: systolic retraction of the intercostal spaces in the region of the apex of the heart; systolic retraction of the left lateral and posterior part of the thoracic wall; diastolic rebound in the lower præcordium; non-alteration of absolute cardiac dulness with respiration; fixity of apex position with alteration in decubitus; diastolic pulsation in the veins of the neck; and pulsus paradoxus. The fixity of the apex site is perhaps the only absolutely unequivocal sign of the condition. The disproportionate amount of ascites is a sign of some importance especially in young subjects, and often perihepatitis is found in association with it, the Zuckerguss Leber of the Germans. My old teacher, Dr. F. T. Roberts, taught me that the apex beat often had a curious character, which he aptly termed embarrassed, and I have found this sign of service.

The character of the cardiac enlargement is often of service in deciding how far any single lesion will suffice in satisfy [illegible] are of [illegible] weak [illegible] increa[illegible] sudden and the heart is already [illegible] failure. Some years ago I saw a case with Mr. W. T. Clegg of Liverpool and within a few days was summoned to a second by him. Both were cases of gall-stone; the first had a sound heart and recovered and the second, who was the subject of mitral disease, died before I reached the patient's house. Potain taught that the tendency to syncope attending gall-stone colic was associated with dilatation of the right heart, and François Franck has shown experimentally that strong stimulation of the bile-duct causes a reflex rise in the pulmonic blood pressure. In this way the difference in the issue of the two cases becomes clear. Another point of value is the general rule that when a cavity of the heart is subjected to strain during its diastole dilatation is the primary result. On the other hand, when the strain occurs during systole then hypertrophy follows. In the first case, if time be allowed hypertrophy follows, and in the second sooner or later dilatation. For example, the high tension of chronic renal disease opposes the systole of the left ventricle and we find typical hypertrophy; in aortic regurgitation the strain meets the ventricle in its diastole and dilatation follows. This, with the secondary hypertrophy, gives us the well-known cor bovinum.

Before considering the question of treatment in heart disease which I shall limit to valvular lesions I must say a word or two on prognosis. There is little to be gained by tabular statements as to the gravity of the various valvular lesions, each case must be gauged on its own merits. Aortic regurgitation is usually regarded with great dread as a cause of sudden death. In my cases I have only met this accident twice, and as one patient had septic endocarditis I should say, perhaps, only once. In this case, that of a young woman, aged 29 years, no necropsy was allowed and I cannot say whether any other lesion was present. I mention this because in another case of sudden death in aortic regurgitation in which as pathologist to the infirmary I made the necropsy I found that the cause of death was the rupture of an aneurysm of the intra-pericardiac aorta into the pericardial sac. Myocardial lesions, too, may cause sudden death.

The nature of the lesion must be determined in order to make the diagnosis, the history considered with care, and the examination of the patient may give the clue. I have a patient in my ward as I write with aortic regurgitation in whom an attack of pneumonia seems to have been the exciting cause. Post-pneumonic valvulitis is said to be usually aortic in site. I might mention that, according to French writers—Troisier, Teissier, and others—cases of mitral stenosis occur in which the tuberculous toxin is the exciting cause. In only one of my 13 cases does this seem the probable sequence of affairs.

The degree of the lesion is the second point. In regurgitant lesions the presence or absence of the corresponding sound will help but the main guide is the alteration in size of the heart. It cannot be too carefully borne in mind that loudness of murmur is no guide to degree of lesion.

The compensatory changes come next. When we find them adequate to the new condition the bearing upon prognosis is obvious, but when they have failed the problem is a little more difficult. We have now to consider whether compensation has failed on account of some special strain or because the reserve force of the myocardium is finally exhausted. In some cases only the result of treatment enables us to decide this question.

Finally, the general history and condition of the patient and his hereditary tendencies will give assistance in settling, so far as human skill can do so, the outlook so important to the patient. I need hardly say what importance the social status bears in regard to this matter of prognosis.

To turn to the second division of my subject I find the following subdivision of cases of service in outlining the treatment: (1) compensation practically equal to the lesion; (2) compensation only equal to the lesion when the patient is at rest; and (3) compensation unequal to the lesion.

(1) Should the patient in the first subdivision be informed of his trouble? I believe myself that this is always a wise procedure, otherwise it is difficult to get the necessary mode of life carried on. In general terms we must warn him against excess of all kinds, mental as well as physical. It is not necessary to forbid exercise in moderation; cycling and so on are permissible as exercise but not in competition. If cycling be indulged in care must be taken not to struggle against head winds or up-hill. Moderation in the use of alcohol and tobacco must be enjoined, abstinence even being advisable General dietetic and hygienic measures should be borne in mind. I might add that even in this stage in mitral stenosis there is the risk of hæmoptysis or embolism. The treatment I have found most useful in hæmoptysis is a free saline purge, with a dose of opium. Are such lives insurable? I suppose most offices would reject aortic cases but would accept mitral cases with an addition to the premium. For my own part I should not advise acceptance, but when such a case comes for report I make it a rule to give a full report on the lines I have sketched and leave it to the office to decide. My reason for refusal is the impossibility of foreseeing accidents, such as infection.

If the patient is a female, what should be our advice, if asked, as regards marriage? The less common form, aortic trouble, is a bar to matrimony. Well-compensated mitral regurgitation cases often pass through pregnancy without trouble; in stenosis cases, although the same favourable course is possible, yet at times grave symptoms arise and notably attacks of tachycardia or acute œdema of the lungs. If pregnancy occurs in a case of mitral stenosis the patient should be kept under observation and the slightest sign of distress should be actively treated. Limited diet, free action of the bowels, with possibly bleeding in the more threatening cases, will sometimes ward off the necessity for terminating the pregnancy. Our advice should certainly be against marriage.

(2) In the second subdivision we find cases in which palpitation, præcordial pain, and dyspnœa are manifest on exertion, and in a more advanced degree some passive congestion and its results in the kidney and liver. In aortic cases throbbing in the neck vessels, headache, and giddiness may be troublesome. Absolutely the best treatment is a week in bed with limitation of fluid and regulation of the diet and moderate purgation. A belladonna plaster often gives relief, whether it acts medicinally or psychically matters little. In aortic cases I have found bromide and iron give relief. General tonics, iron, strychnine, and the like, with perhaps small doses (from two to three minims) of tincture of digitalis where rest cannot be taken will help to put our case into subdivision (1) It is of great importance to determine the nature of the valvular lesion: Is it associated with vascular and renal disease or is it purely cardiac? The tension of the pulse and the state of the artery are valuable guides to treatment; when the former is high and the latter shows signs of disease a rigid milk diet coupled with diuretics

acting on the kidney, such as the xanthin derivatives and the use of some mineral water, will help to lower vascular tension by eliminating toxins.

(3) The case of valvular disease, whether aortic or mitral, which reaches hospital suffering from the signs and symptoms of failing heart needs little description. The heart chair to maintain the trunk upright is often necessary. I need not dilate on the necessity for care in feeding but would simply say that limitation of fluid is often of great service. The bowels may be gently acted upon. Sleeplessness is often a troublesome symptom in mitral cases attended with marked mental depression. In aortic cases excitement and even maniacal attacks may be present; I have seen one case of violent mania in aortic regurgitation. The modern hypnotics—trional or sulphonal and paraldehyde —sometimes suffice but opium is our sheet anchor. I have never forgotten a case of heart disease in a young subject which was admitted to the infirmary when I was a house physician. Apparently all our efforts had proved futile but opium before food was ordered in the form of liquor opii sedativus and liquor pepticus after food. The girl forthwith began to mend and eventually was able to leave the hospital in very fair condition. I have seen good service rendered by the old pill of squill, digitalis, and mercury when the engorgement of the stomach and liver has been marked, and blue pill is the well-spoken-of remedy of many sound practitioners. Should we use digitalis in aortic cases? The answer to this is not quite simple. When we find thickened arteries and possibly some increase of tension in the radial pulse, placing the case in what Huchard and his pupils would call the cardio-vascular class, there is no doubt that the best line of treatment is to limit fluid intake, open the bowels, and give renal diuretics. If direct cardiac stimulants are used I prefer strophanthus. As common practice in these cases I give strophanthus through the day with a dose of agurin night and morning. Even in these cases, however, when the pulse tension is low, digitalis is demanded, and I have no hesitation in giving it to an aortic case when the mitral valve has yielded. Trousseau's diuretic wine is a good remedy in similar cases. When digitalis cannot be taken by the mouth the hypodermic use of digitalin will often start the case on the way to convalescence. I need hardly say that in some cases œdematous fluid will have to be removed by instrumental measures; this especially applies to the accumulations in the serous cavities. Dyspnœa is often improved by the use of atropine and strychnine hypodermically. The sinking sensation so often complained of by cardiac patients in the later stages can be alleviated by the exhibition of solid opium or neat brandy.

Liverpool.

THE RELATION OF INEBRIETY TO INSANITY AND ITS TREATMENT.

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THERE are several groups of alcohols in which the physiologist and the physician are interested and these vary from the monovalent alcohols, such as ethylic, propylic, and amylic alcohol through cholesterine, glycerine, and cellulose to the pentavalent phenols and other aromatic compounds. Speaking generally, from their action upon man only the monovalent group concern the subject of our consideration. The effect of alcohol upon living protoplasm has been carefully studied by competent workers and the literature of the subject is full and extensive. Alcohol stops the germination of spores and grains and when the proportion of alcohol exceeds 20 per cent. in the material undergoing alcoholic fermentation further action is stopped, so that this quantity of alcohol becomes lethal to its own development and all further fermentation is arrested. Alcohol is a dys-osmotic and when ingested it passes with difficulty through the living cellular membrane of the capillaries into the tissues. It causes a reaction on the part of these cells which in consequence proliferate and the capillary walls thicken, in this way not only depriving the special organs of their necessary nutriment but also retarding the excretion of waste material which thus accumulates in the tissues and interferes with their healthy and normal functions. It is this accumulation of effete material which has given rise to the view that poisoning from alcohol is not a direct toxæmia but an indirect one from the production and the accumulation of leucomaines. It is further known that alcohol is a strong dehydrating agent, and as dehydration is as hurtful to protoplasm as superhydration, and as a fixed amount of water is therefore necessary to healthy protoplasm, indeed more necessary for protoplasm than is oxygen—for oxygen cannot reinvigorate dry protoplasm—this dehydrating action of alcohol upon protoplasm is highly injurious. The effect of alcohol upon protoplasm is to paralyse irritability, diminish sensibility and contractility, and when sufficiently concentrated to suspend the action of all ferments. The experiments of Féré upon incubating eggs also show the evil influence of alcohol upon the metabolic, the motile, and the reproductive functions of animal cells.

The causes of inebriety.—It has often been asked, "Why do men drink?" There are probably different reasons among different classes in the social scale. The rich drink for artistic and æsthetic reasons—a good meal is made a better meal. The poor drink in order to get a good meal. It is believed that the stimulation—mistaken for nutrition—is more easily obtained from drink than from a meal, which is more expensive, more difficult to select, to prepare, to cook, and to serve. The poor also get light, warmth, comfort, and society in the public-house. Poverty itself is a cause of drink and drink helps them to forget their human misery, but I believe drink is more often the cause than the effect of poverty. It calms physical and moral pain and the pleasure obtained becomes a customary want. The rapid increase in the volume of wealth and the profits of trade make it easier for the mass to obtain alcohol and there is in many instances a temptation (through facility of access to it) from the number of public-houses. Lastly, there is no doubt that the hurry, the artificial desires, and the quest of pleasure characteristic of civilisation favour drinking habits in both men and women.

Physiological effects.—Alcohol brings about marked degenerative changes in the nervous, muscular, and glandular tissues. Its action is a structural one, and change of structure implies altered function. We find these altered functions manifested in commencing intoxication, when the ideas flow with unaccustomed facility, words are uttered more freely, and language becomes more expansive and confiding, cares vanish, everything seems more full of attraction, and the world seems better. There is a sense of *bien-être*, the eye is kindled, and the visage and the physiognomy are illumined; but this picture soon falls into shadow, for the ideas soon become dissociated, the intellect pales, and words become a vertiginous whorl. The memory becomes affected, the gaiety and the optimism of the previous stage are replaced by sadness, tears, and a querulous or dour disposition; all the senses are overshadowed and the mind ere long becomes a listless chaos without order or purpose. The higher psychic faculties disappear in the order of their importance, there is loss of prevision and judgment, there is failure in the concentrating or focussing power of the mind, and the memory and the attention are both enfeebled. Alcohol attacks first the hierarchy of the organic functions, those which are in the front rank, and they are affected in the inverse order of their development, those last developed being the first to surrender; inhibition or self-restraint—the reserve characteristic of the self-respect of higher man—being first withdrawn. The initial flush of excitement referred to above is readily explained upon physiological grounds by the effect that alcohol exerts upon the capillaries which undergo initial dilatation and subsequent paralysis. The intellectual exaltation noticed has no bearing or relation to genius; it is merely a suspension of the highest faculties which permits the next highest to rise into prominence; it sets free the shackles and removes the veil from a less highly evolved mental plane, and free play is given to the uncontrolled feelings. The effect of alcohol is to stimulate the desires whilst diminishing the power to gratify them. It creates a false feeling of strength which when taxed is not sustained, and alcohol is dissipative rather than conservative of energy. The extension of the effect of alcohol to the motor areas is characteristic and the final stage of complete muscular paralysis is well known as occurring in the wake of unsteadiness, the gait of the inebriate being too familiar to need description. Coexisting with the mental changes are those material ones in the nervous system, the muscular and the glandular tissues Alcohol in large doses has been proved to cause changes in the pyramidal cells of the brain It destroys the fine processes of the cells which swell from degenerative changes, their outline is altered and the nucleus is displaced or extruded Fatty changes are produced in the voluntary and the involuntary muscle fibres and also in the different gland cells which in consequence alter the metabolism of the organism An increase also takes place in the amount of fibrous or cicatricial tissue both in the blood vessels and in the various secreting glands, so that malnutrition is induced and a lowered resistance to disease occurs which reduces vigour and diminishes vitality As to the increase of fat in the body, the statement is not maintained that alcohol itself is consumed to supply the energy which is normally obtained from tissue changes [illegible] oxidation" over the body [illegible] the building up process [illegible] noglobin of the red blood corpuscles which takes up and parts with oxygen less readily than normal hæmoglobin The accumulation of fat is due to a general diminution in the metabolism of the body and to an accumulation of waste matter which should be excreted This accumulation of fat is in part an active degeneration as well as an infiltration and it can be proved to be at the exp [illegible] measured by th[illegible] infiltration and [illegible] of acute alcoholic poisoning

Mental effects —The mental effects of alcohol differ as to whether *they are induced by one large dose, as occurs in* alcoholic poisoning or in ordinary drunkenness, or whether they are the result of long chronic drinking even when this *is done in what is described as "moderation" It is a* curious fact, but one well known and appreciated, that the mental symptoms of chronic excessive alcoholism may and sometimes do result from long continued moderate drinking, more especially if the person is overtaken by a serious illness or a severe mental shock also if the drink be spirits The tendency to the development of illusions, upon which are based delusions of a persecutory nature, is very common in persons who drink alcohol to excess, indeed it is not too much to say that persons who become insane and whose symptoms present visual illusions or delusions based upon them, or whose delusions are grandiose, boastful, and vain glorious, or relate to sexual perversions, such as marital infidelity, or are suspicious, distrustful, and persecutory in their character, are almost invariably directly or indirectly caused by alcohol It is almost without exception that when delusions are present as the result of excessive alcohol they are of a malignantly fearful and persecutory character These facts supply a reason for the classification of alcoholic insanity as hallucinatory or delusional Both varieties tend to terminate in dementia which indeed may be the only form the *patient* becoming dull, weak minded, and listless, leading a purely vegetative and automatic life from the onset

Much confusion has resulted from the careless use of terms in dealing with the effects of alcohol Alcoholic insanity is often used as a generic term and is simply defined to be a mental perversion for which alcohol is the prime cause It is often difficult to separate those cases which are *mad* from those who are '*bad* as due to the same cause Both these forms may be seen in prisons reformatories as well as in asylums The forms of mental disorder resulting from alcohol are therefore (*a*) gross dementia, (*b*) maniacal, unrestrained excitement due to hallucinations, or (*c*) permanent delusional states It is often not the quantity imbibed but the susceptibility of the brain and nervous system through inherited or other vice which determines whether a given case shall be considered a lunatic, an inebriate or a chronic drunkard It is well to avoid a definition of insanity but the Inebriates Act of 1879 lays down a legal definition for the inebriate or the chronic drunkard and it is as follows "Any person who is by reason of habitual intemperate drinking of intoxicating liquor *at times* dangerous to himself or herself or to others or incapable of managing himself or herself and his or her affairs" The Secretary of State is advised that intoxicating liquor "may include liquors other than alcohol if their habitual intemperate use brings the consumer into the condition of an 'habitual drunkard A distinction has also been drawn between "drunkenness" and "chronic alcoholism" The latter term is used by the Registrar General in his statistics of mortality, whereas the former is used in furnishing statistics of crime and for police-court purposes There may be considerable chronic alcoholism either among a group of persons or in individuals such as licensed victuallers, barmen, brewers, labourers, and those in general employment by the trade, or among a special class such as commercial travellers, and yet very little chronic drunkenness The vulnerability or the *susceptibility of the various organs is a deciding factor in this classification*

As to insanity in relation to crime, the statistics of medical officers of prisons throw much light upon their close connexion At Aylesbury and Warwick, the two State reformatories, most of those under detention are inherently mentally defective They are sent there in the first instance after an attempt has been made and failed to make them amenable to discipline They are habitually sullen or unreliably excitable and they vary in their conduct from one hour to another They are suspicious and ready to take offence when none was intended At the same time they are free from hallucinations or delusions, their special features being a low intellectual capacity and their inability to follow a train of reasoning or to behave reasonably in daily life They are creatures of impulse and are not amenable to method and order The relation of crime to insanity is demonstrated by the fact that in 64 per cent of the women there was a history of insanity and that 25 per cent of the males who left Warwick and 33 per cent of the females who left Aylesbury were transferred to asylums for the insane

Of all the special symptoms characteristic of forms of alcoholic insanity the condition termed "paramnesia" is the most indicative This is a failure of memory for recent events, an impairment of that special adhesive quality of nerve cells by which the brain is able to retain the images of *past sensations* and in consequence of which there is a marked loss of the power of associating ideas The person is lost and confused, he often brings the long past into the present, he is busy with previous plans, makes imaginary journeys, and has just seen old companions or acquaintances It is this feature in drink cases, this forgetfulness and confusion, which makes men *and women* (*especially the latter*) appear so inclined to distort the truth and to appear to be given to somewhat deliberate and shamefaced lying They are unable to retain *impressions of their own state*ment and those of others and they are incapable of concentrating and fixing their attention upon passing events It is this failure of memory which causes self-contradiction There are also in these cases a busy delirious restlessness and a mental wandering, causing a loss of "orientation," as it has been called, the patient being confused as to time and place Another peculiarity of chronic drinkers is the impulsiveness of all their reactions when excited, often their reaction to sensory, visual, and auditory stimuli is retarded but when they do react they are impetuous and essentially spasmodic and convulsive in character Patients of this class are almost always irritable, sudden, and violent, their temper is unrestrained, and licence in speech and action often becomes apparent in their conduct In one particular class of chronic drinker the moral nature is much perverted, the will power or the inhibition is weakened, but there still remains the knowledge of right and wrong and under a sufficiently powerful stimulus there is power to abstain from [illegible] ve no influence and an [illegible] The conduct, although [illegible] reasonable except upon [illegible] g for which exercises a [illegible] idual, who is now called [illegible] an inebriate Inebriety is of two kinds, one characterised by intermittence [illegible] the constant [illegible] quently in y[illegible] of age When the vice is [illegible] occurs about the period of menstruation The periodic drinkers are generally of unstable parentage and come from a faulty stock affected with some neurosis and evidenced by a history in the ancestors of either drink epilepsy, insanity, or neuralgia After an outbreak of drinking the victims either become exceedingly despondent and suicidal or they may become violent and frenzied from delirium tremens which occurs mostly in this class These conditions pass off after a time to be again repeated but in the intervals of drinking they are agreeable and reasonable and are heartily sick of their own loss of *self control They are* penitent and they promise amendment, indeed, they may loathe the very sight and smell of drink. In these intervals they probably fulfil their natural obligations to those dependent upon them and to society. In these cases also large quantities of alcohol may be imbibed during the drink period without any of the natural physiological effects such as drunkenness or motor paralysis usually seen in the ordinary drunkard. The so-called constant drinkers, on the other hand, are persons usually in later life, and it is these who, before the Act which came into force on Jan. 1st, 1903, disgraced our streets and public places and contaminated our youth. These are morally and intellectually depraved persons who are unfit to associate with decent human beings. They are a reproach to their friends and a by-word of opprobrium and contempt to their neighbours. No amount of persuasion in regard to the evil effects of drink appears to have any influence in preventing persons in either of these two classes from drinking and no argument as to their deadly course is of any avail. They must have their drink even if it pauperises them or makes them the associates of low persons and criminals or even if their families are ruined by it. The pleasure to themselves has become a customary want and must be gratified.

Motor symptoms.—Alcohol induces epilepsy, especially in those who have suffered head injuries, and I have known several cases in which, when the alcohol is stopped, the fits have ceased, reappearing when further indulgence occurs. All drinkers become subject to sensori-motor disturbances and tremors, the lips, the hands, the voice, and the parts most subject to stress being the first affected. It is among the skilled craftsmen whose evolutionised movements do high-class manual work that alcohol plays a havoc and the distress which falls upon those dependent upon these is too well known to need discussion here.

Sensory symptoms.—Owing to an affection of this territory of the nervous system cramps and loss of sensation in the extremities—and most often the legs—are frequent symptoms of alcoholic indulgence. Visceral and other hallucinations are common and complaints as to electricity and machines are quite frequent. The lesions in this form are in the main peripheral, they are also mostly bilateral and tend to be centripetal. As to the pathological cause of disturbed sensation, it may be the direct anæsthetic effects of alcohol acting peripherally upon the terminations of the sensory or motor nerves; it may also be a direct effect upon the cortical neurons which are the central representatives of these projections.

Susceptibility.—We are unable to foretell definitely the particular group of neurons likely to suffer in any special case of alcoholic indulgence, neither can we give the progress of the symptoms when a group of neurons has been attacked. This fact demonstrates the existence of a *locus resistentiæ minoris* for each individual. We know that some persons break down from arterio-sclerosis, thrombosis, hæmorrhage, and softening, others from a fibrous infiltration of the glandular structures, and others again from mental or nervous lesions. We know, for example, that syphilis in the parents may be evidenced in one or more of the immediate descendants whilst the other children escape altogether. In many cases all the children may escape stigmata. In some we find locomotor ataxia in the father developing general paralysis in the son and *vice versâ*. What it is that constitutes the immunity in the one case and the susceptibility in the other we do not know. We do know, however, that alcohol has an affinity for the highest developed functions—both mental and physical—and that stress of a particular organ renders that organ more vulnerable and more liable to surrender. For instance, alcoholic peripheral neuritis has been known to occur in the right arm of a barmaid, whilst the lower extremities have escaped entirely. This susceptibility or the personal equation of the individual is a dominant factor in the incidence of disease other than the result of alcohol.

General results of alcohol.—In chronic alcoholism the effects produced possibly bear more relation than is usually accepted to the form of alcoholic mixture taken and the deleterious effects of spirits are combined with those from a category of mixed poisons; the amylic alcohols in crude whisky—most of which is now prepared, not from malted barley, but from molasses, rice, or maize and which is served in a raw state—probably have a more injurious and a different effect from that of the lighter wines. Such a poison as absinthe, mixed and served with raw spirit, must have a hurtful influence of its own in addition to that from the manufactured and inferior spirit. Richet states that the more volatile the spirit the more marked are the anæsthetic effects of alcohol; the less volatile it is the more marked are the convulsive effects; and that the more soluble in water the alcohol may be the more marked are the inebriating effects. I should like to hear this question of the influence of different forms of alcohol upon the individual further discussed. I am of opinion that among the poorer classes, whose beverage is mostly beer, there is considerable malnutrition found as the result of beer-drinking which induces gastric catarrh. The beer undergoes further fermentation when ingested, the lower forms of bacteria develop and multiply, and the formation of foul gas causes dilatation of the stomach and dyspepsia; this gastric and intestinal irritation, which is more marked than the glandular cirrhosis caused by spirit-drinking, often gives rise to wasting and diarrhœa, with a lowered vitality.

The evil effects of alcohol may readily be seen in the subjects of surgical operations who are beer-drinkers. Their wounds take long to heal and they are subject to many unfavourable complications. The mental defects in beer-drinkers are those of general impairment and dulness more akin to dementia than the perversion, the suspicion, the cunning, and the delusions so commonly found in spirit-drinkers. There is no doubt that one of the chief results of alcohol is a tendency to fatty degeneration and to diseases such as pneumonia and tubercle, to skin eruptions of various kinds, to laryngitis, atheroma, motor and sensory disturbances, and also to the various neuroses and crime. It is a significant fact that during the ten years of which I have had experience of the London County Asylum, at Claybury out of a total of nearly 10,000 persons admitted over 22 per cent. of the men and 13 per cent. of the women owe their insanity directly or indirectly to the effects of drink. That alcohol is a poison to the whole animal series is without doubt and that it shortens life is strongly evidenced by the careful statistics of life insurance societies.

Heredity.—There can be no possible doubt, indeed I may say there is general agreement as to the opinion, that alcoholic excess devitalises the individual, both directly and by the influence of a vitiated environment. How far this is transmitted to the descendants is a very vexed question. That parental intemperance is a large factor in the deterioration of the offspring, both mentally and physically, is the opinion of many experts. Whether it is the predominant factor in any definite case is uncertain, for intemperance may be the result of an insane heredity; in such a case it is possible that insanity or some allied neurosis may be the chief cause of the deterioration. Heredity is as characteristic of alcoholism as it is of any other form of moral insanity. It occurs in about 33 per cent. of all cases of alcoholic insanity. Various kinds of neuroses may be found in the family history of almost every inebriate and this condition tends to predispose to inebriety in those who taste and partake of alcohol. Further, I am able to affirm from an extensive experience in a large asylum that the offspring of the drunkard is often a degenerate and a psychopath—a class which is most susceptible to the influence of alcohol. They are more liable to suffer also from delirium tremens and violent mania after taking alcohol, even after a single debauch, than the drunkard without heredity who, on the other hand, suffers more often from cirrhosis of the liver and kidneys and is sent to the hospital for treatment, whereas the psychopath or neuropath with an insane heredity is sent to an asylum. I believe in the transmission of acquired characters but the deductions of morphology, laboratory experiments, and microscopical observations are against this belief. It has been long pointed out[1] in the vegetable kingdom that an alteration in the environment of plants can bring about variations and when the cultivator repeats the conditions which cause these variations the latter become fixed and are inherited. Precisely in the same way does the inductive evidence from observation and experiment afford us knowledge as to the animal kingdom; the alcoholic environment is capable of bringing about a modification in the offspring as is seen in the attenuated neurotic children of many drunken parents. As having a special bearing upon this aspect of the transmission of acquired characters may be mentioned some unpublished experiments of Dr. G. A. Watson who injected guinea-pigs with ricin and created an acquired immunity to 1000 lethal doses in the immediate offspring. In the face of such results it is not too much to be quite certain that alcohol in the parent affects the offspring. Furthermore, in the vegetable kingdom we know that Alpine plants have a certain "facies," they are stunted in size but brilliant in bloom, and moist tropical flora,

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[1] Henslow: Royal Horticultural Society, 1904.

together with the flora of the dry desert, have each their "facies." Moreover, dicotyledonous plants have finely dissected leaves when growing under water. All these facts tend to show the influence of the environment which is acquired and transmitted because the seeds transmit the characters, the plants all coming true by the seed. It was an axiom of a celebrated French botanist that everything tends to become hereditary. A few generations encourage acquired traits in man, as may be seen in the appearance and bodily conformation of certain country folk, and nature tends to fix these. We can often tell the town-dwellers and their children from characters induced by their environment and partly from the transmission of these acquired characters through heredity. It is not too much to say that there is a definite response on the part of living protoplasm to changes in the environment and these changes become adapted to the new conditions of the organism and tend to become acquired. We can control inherited vice by a change in the environment and if the new and favourable environment is maintained and the surroundings are healthy we are able to remove some of the most fertile causes of drink. In sanitation and morality, plenty of pure water, fresh air, radiant light and sunshine, rational pleasures, education as to the value of good food, how to select it, and how to cook it, we have the best antidotes to drinking tendencies. This influence of education, the impressions given by social usage, increased facilities for healthy physical exercise and recreation, and the controlling factor of public opinion as to the effects of alcohol serve *as the best auxiliaries to temperance*. Such means are beneficial to self-respect and tend to sobriety. It is only with a healthy environment that we can sustain the organism in full vigorous health and supply the greatest resistance to temptation.

Treatment.—With regard *to inebriety the treatment* resolves itself into the general treatment of drunkenness and that of the individual. As to the latter it is either in their own homes or in retreats. In both cases it is certain, in my mind, that alcohol should be cut off completely and in the great majority of cases, indeed with but few exceptions, the total and sudden deprivation of alcohol is beneficial. In the few exceptions collapse results from sudden withdrawal of stimulants and this needs careful watching, for in cases complicated with insanity pneumonia is not an uncommon complication. This pneumonia fails to undergo resolution and it ends in phthisis with death probably within the year. Sleep and nourishment form the keynote of treatment; sleep is best obtained by gentle outdoor exercise, failing this by bromides—but not by morphine, as the latter may initiate a new craving. The great motor restlessness so often seen in alcoholic cases and caused by painful visual and aural hallucinations is best controlled by hyoscine in doses of from $\frac{1}{120}$th to $\frac{1}{50}$th of a grain administered hypodermically. Sulphonal and trional (20 grains twice or three times a day) are also useful but they increase the muscular incoördination and as the solubility of these drugs is limited they may disturb digestion and give rise to gastro-enteric catarrh. When the pulse is weak and in the case of elderly persons, paraldehyde in drachm doses is a safe sedative stimulant. It is necessary to watch for retention of urine when patients are under the influence of sedatives and it is also important to notice twitching of the muscles which may indicate uræmia, although *convulsions* may be due to causes other than alcohol, such as diabetes or epilepsy or cerebral hæmorrhage. As to feeding, simple, easily assimilable food—peptonised if necessary and a little at a time—should be administered. The general disturbance of the digestive system, marked by loss of appetite, sickness, or vomiting, often tends to make the taking of food repulsive. In these circumstances ice, effervescing mixtures, salines, bismuth, or lime-water may be useful. The bowels should be carefully attended to and saline aperients taken freely to correct the dyspepsia and improve the appetite, which can often be stimulated by nux [illegible] or strychnine and bitter tonics [illegible] attention must be given to [illegible] of bed-sores, for the tissues of alcoholic persons are peculiarly unresistive and bed-sores once formed are most difficult to heal. For the cure of inebriety I do not know that there is any drug that can be relied upon and the secrecy of the various cures indicates their futility.

The following case under my care is typical of a great number of persons enslaved by alcohol and brought into retreats. A married woman, aged 21 years, left much to herself as her husband was often engaged in the evenings made undesirable friends who led her into drinking habits. Her father and brother died from alcoholism. Having become a victim she was taken (1) to a private home where she remained for six months and where she paid £60 and extras. She left (with her husband) as cured, but within a week relapsed, underwent (2) a special "cure" lasting a month, and this for four months in succession, each time with a private nurse, for which cure her husband paid 20 guineas per month in addition to payments for board, rooms, &c. Following this seven months afterwards came (3) a "cure," in the course of which she was twice inoculated in the left arm; she remained under this treatment for six weeks and paid 40 guineas. No improvement occurred, in fact she became worse, and two years afterwards matters were so bad that she was separated from her husband. In less than six months she was persuaded to enter (4) another retreat where she remained four months. Two days after she left she relapsed and was taken to (5) another home, where she remained two months, and upon leaving again immediately relapsed and was admitted into another home (6), where she remained from six to seven months, and underwent the treatment recommended in the previous home, taking "some medicine" every hour for 28 days. At the end of that time she wrote a testimonial that she had lost the craving and that her nerves were better. She soon relapsed and was then transferred to another home (7) where she remained four months. Two days after she left there she became absolutely drunk again and was brought to Claybury Asylum *for attempted suicide* where she has remained a year. She is about to be discharged as there are at present no indications of suicidal insanity.

I would here enter a protest against the gratuitous puffing of quacks and their remedies by the clergy, some of whom appear almost to ply a trade in these vaunted nostrums. What would be said of medical men who publicly opposed the teaching of clergy holding advanced theological doctrines or who pointed out what they considered to be false teaching or excessive ritual in the ranks of the ecclesiastical hierarchy?

The general treatment of drunkenness has become a question for the statesman, the reformer, and the philanthropist. The public, seeing the evil of excessive indulgence, has taken the matter into its own hands and has insisted upon special legislation to deal with drink. It acknowledges that excessive facilities mean excessive drinking and areas of congested population with a large supply of public-houses are also areas of excessive disease and mortality from alcohol. Measures which control the sale of drink assist sobriety. This is not only the testimony of the police but also of others who are responsible for the regulation of disorder and the scope of the present Licensing Bill is upon this basis. In so far as the treatment of inebriety by restraint is concerned the law at present permits *of detention in* (1) *retreats, or* (2) reformatories, the essence of the treatment being to cut off the patient completely from alcohol and the recognition of the fact that inebriety *is a vice and that the victims* are not insane. The Inebriates Act of 1879 allowed a chronic drunkard voluntarily to enter a retreat and to segregate himself from the rest of society with a view of reforming his character by improving his will-power. The Inebriates Act of 1898 *compulsorily* ordered his detention, and a "retreat" into which admission is enforced is no longer called a "retreat" but a "reformatory."

Retreats are for inebriates; *reformatories* are for law-breakers as well as inebriates. Retreats are for the treatment of private drunkenness in private life—i.e., for those persons who bring misery and ruin upon themselves and their families. A retreat is an institution conducted for the control and treatment of a certain class of inebriates and may be conducted by one or many persons under a licence from a county or borough council. Persons who enter retreats go there voluntarily; *they actually ask for detention* which must not be for over two years and they submit to restraint. Two documents are necessary: (1) a request for reception, or retention after reception, or for readmission—if within five years of a previous residence—signed before a magistrate; and (2) a statutory declaration, in view of admission, signed by two friends, also before a magistrate (or a commissioner of oaths). Persons thus received are "patients under the Act" and 259 "patients under [illegible] discharged, and 199 [illegible] An inebriate may also [illegible] magistrate's attestation, there being only the applicant's request, but in this case he cannot be detained against his will, even if he has promised to stay for any definite period, and if he leaves he only forfeits his payment if he has not stayed his full time. Such patients are described as "private patients" and 293 such patients were admitted into the 21 retreats existing in 1902, whereas 283 were discharged and 216 remained under treatment. It will thus be seen that about one-half of the total 552 (247 males and 305 females) persons admitted under care into retreats was of the voluntary, temporary, or "private patient" class. A patient received into a retreat may have "leave of absence" or he may be discharged before the period of detention expires if the licensee recommends and a magistrate consents and a notice of intention to discharge is sent to the Secretary of State. It may be pointed out that in some countries (France, Germany, and Austria) "guardians" can be appointed to look after the property of the inebriate and to compel his detention in a retreat, a power similar to that given to magistrates by the Act of 1898, but upon the question of legal care of inebriates, as also upon other matters, reference must be made to the special report of Dr. R. W. Branthwaite to the Home Office.

Reformatories are of two kinds—viz., (1) State reformatories, of which two exist—one for females at Aylesbury and one for males at Warwick—established (*a*) for the 10 to 15 per cent. of more refractory cases in other reformatories and (*b*) for those committed from the assizes or sessions and not from police courts; and (2) certified reformatories for criminals and police-court cases, called "police-court recidivists." These reformatories, of which there are now eight with 624 beds, are of two kinds (*a*) philanthropic and (*b*) rate-aided from local authorities which are established for impoverished and destitute persons. At the end of 1902, four years after these were first established, 714 persons had been admitted and there were 419 under detention at the end of the year 1902, 278 (46 males and 232 females) having been admitted during the year. At first there were more males than females; at the end of four years, however, the males remain the same but the women have doubled. Two kinds of cases are sent to reformatories: 1. Persons convicted of habitual drunkenness and a crime punishable by imprisonment or penal servitude and called criminal inebriates. These are sent to State reformatories but they may be sent to certified reformatories, the Secretary of State having power to transfer them subsequently to State reformatories; 46 were so sent during 1902. 2. Persons who had committed a scheduled offence (mostly different kinds of intoxication) and against whom there had been three previous convictions for drunkenness within the year. These are sent to certified reformatories; 232 were so sent during 1902. In June, 1903, there were no fewer than 495 persons of the worst possible class and character detained in reformatories to the great relief of many homes, of the order and safety of our streets, and to the advantage of public morality and decency. Many of these are mentally deficient and degenerate and are unimprovably refractory. The last Act which became law in 1903 gave inebriates a further chance of improving by three years' abstention on the "black list" at large rather than undergo detention. It also made it possible for a wife to be separated from a drunken husband and for a wife before separation to go voluntarily into a retreat with a view of reforming.

Claybury.

CONTRIBUTION TO THE SERO-THERAPEUTIC TREATMENT OF ANTHRAX: TWO CASES OF GENERAL ANTHRAX INFECTION IN MAN CURED WITH ANTI-ANTHRAX SERUM.

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In deciding how far a specific treatment is really effective in a disease which is not necessarily fatal, as, for instance, anthrax in man, I believe that it is of the utmost importance to record those cases (by no means rare in practice) in which that treatment has been used under conditions of extreme gravity when the morbid process has become generalised, and in which also clinical observations have been accompanied by the strictest laboratory experiments. I propose to give a detailed account of two cases of general anthrax infection, proved to be so bacteriologically, and successfully treated by me with anti-anthrax serum at St. Paul, Brazil. One of them will be seen to have been of exceptional severity. I shall describe briefly the mode of preparation of the serum, its specific strength, and indicate certain rules which should be observed in the special cases when it is injected into the human subject. Its preparation was commenced in February, 1902, at the Bacteriological Institute of the State of St. Paul. The method followed was the same as that which I had used in preparing the bactericidal antidiphtheritic serum—viz., inoculation in gradually increasing doses of "sensitised" anthrax bacilli alternately with injections of older anthrax cultures in broth to which had been added, in accordance with Sclavo's method, 5 per cent. gelatin, with the intention of also inoculating in all probability considerable doses of the toxic products of the anthrax bacillus. Each inoculation was followed by one of anti-anthrax serum in doses of from 10 to 15 cubic centimetres until the animal from which the serum was to be obtained had acquired a decided resistance to the anthrax bacillus and its toxic products. To "sensitise" the germs and for the protective inoculation Sclavo's serum proved of the greatest use. I chose the sheep as the animal from which to obtain the serum for the reason, that although less resistant than the mule, its smaller value allows the experimenter to render immune a great number of animals simultaneously. Sclavo has shown that this is absolutely necessary also in the case of the ass, the activity of the serum differing in one individual and another. Some animals even after quite a long period of immunising treatment furnish a serum almost destitute of specific properties. By the above method I obtained from a sheep of about 30 kilogrammes in weight after one and a half months' treatment a serum possessing considerable antibactericidal and antitoxic activity. To determine its bactericidal power in vitro, following Bordet and Gengou's method for determining the presence of immune bodies and specific agglutinins, I placed given dilutions of serum in normal physiological salt solution in contact with emulsions of scrapings from the surfaces of recent agar cultures of anthrax bacillus filtered through paper in the same way as was done by me for the bacillus of diphtheria and bubonic plague, these being, like the anthrax bacillus, germs that normally develop well in the liquids used for cultivating them. The anti-anthrax serum thus prepared attained a high proportion of immune body, as could be easily shown in vitro. Its agglutinating power on the anthrax bacillus attained a maximum of 1 in 40—a high figure when the low agglutinating power and the small agglutinogenous properties of the anthrax bacillus are borne in mind. The very active anti-anthrax serum prepared by Sclavo rarely attained a higher agglutinating value. To test the preventive and curative value of the serum I made use of Sclavo's method—viz., intravenous injections in the rabbit of from three to five cubic centimetres of serum simultaneously with subcutaneous inoculations of one-half to one cubic centimetre of a dense emulsion of anthrax bacilli made by diluting with distilled water scrapings from the surfaces of young agar cultures. This amount of virus was invariably sufficient to kill the control animals within 48 hours. In the various experiments made I was always able to save at least one-half of the inoculated rabbits. The susceptibility of the rabbit to anthrax is, as is well known, so great that this result may be considered extremely good. There is no experimental method by which to determine exactly the antitoxic power shown by the anti-anthrax serum, mainly because we have not yet succeeded in preparing a true anthrax toxin and are ignorant how far the products derived from cultures of the anthrax bacillus resemble in constitution and in effect the toxic products elaborated by the same bacillus in the living organism. Anyone, however, who has had occasion to make use of a properly prepared anti-anthrax serum in exceptionally severe cases of anthrax in man can easily assure himself of the existence in this serum of energetic antitoxins. In serious cases of this kind the toxic phenomena are evident and very distinct but after the use of the serum they diminish and disappear with [illegible] This was my experience in the two cases [illegible]

Before giving a detailed description of these two clinical cases and of the specific serum treatment adopted I shall touch upon a special detail in the injection of the serum in man. This detail concerns only such severe cases as necessitate intravenous injections of serum in large doses. Here perhaps I am not in agreement with all those who have treated the subject. Sclavo, for instance, thinks that the activity of the serum to be inoculated alone should be considered, which acts first of all as an energetic excitant of the natural powers of defence possessed by the organism. Although we may admit the fundamental truth of this principle, we must nevertheless remember that in cases of exceptional gravity, treated at an advanced stage when little reliance can be placed in the power of reaction of the organism against the disease, there is no reason why we should not attempt as complete and rapid a neutralisation as possible of the toxins circulating in the system. The two cases to be described prove incontrovertibly the correctness of this theory; and I therefore feel myself justified in recommending that in cases of anthrax in man which show a decided tendency to generalisation, and especially in such as are marked by the phenomena of poisoning (diffused œdema, disturbances in the circulation, renal lesions, &c.), abundant intravenous injections of the anti-anthrax serum should be made. Moreover, my own experience shows, what others have already observed, that these intravenous injections of serum when carefully made even in large quantities give rise to no serious disturbance in the patient, and this is a further argument in favour of resorting to them in desperate cases. The practical detail in the method of injection referred to above relates to the large doses of serum which must be inoculated in these cases, for following as I did Sclavo's method of preserving the serum by adding to it ether in the proportion of 3 per cent. there is the risk of introducing into the veins with a large dose of serum a considerable amount of ether and this might be harmful. To obviate this danger I act as follows. A common glass vessel (an ordinary table glass will suffice) is boiled together with some squares of gauze. After the ten minutes' boiling necessary for sterilisation the vessel is removed from the water with its mouth covered with the gauze. As soon as the temperature of the vessel has sunk to about 104° F. the serum to be inoculated is poured upon the gauze and filtering through into the vessel below is freed from the precipitate which, especially if not of recent preparation, is always present more or less and which might be harmful if injected into the veins. It is freed also of the greater part of the added ether which rapidly evaporates, especially if the glass is well shaken. I introduced the serum thus prepared very slowly into the veins of the patient, pressing down the piston of the syringe little by little, so that I was able in the following two cases to inject large quantities (as much as 150 cubic centimetres at [illegible] results.

[illegible] 30 years, a cattle-[illegible] h, 1903, at 11 A.M., I was called by the medical man in attendance (Dr. Sodini) to examine the patient and to treat him with serum should it appear advisable. I was informed that the man had observed on August 4th a small pimple attended with itching in the middle third of the flexor surface of the right forearm. Having no suspicion of the gravity of the case he had poulticed the affected part and had not called in a medical man. The same evening he became feverish and becoming rapidly much worse medical attendance was sought on the following morning (the 5th). Dr. Sodini found the patient with a temperature of 105° F., very much excited, and his pulse frequent and irregular. The right forearm was very œdematous, the skin was stretched and reddened, and in the middle third of the flexor aspect there was a pustule with a necrotic centre surrounded by a broad bluish band. The epitrochlear glands were very much swollen and in the right axilla a gland was seen of the size of a nut and painful to the touch. Dr. Sodini recognised that he probably had to do with an exceptionally serious case of external anthrax showing a tendency to rapid generalisation. Dr. A. Vieira de Carvalho and Dr. Pereira da Rocha were called in [illegible] external [illegible] it was d[illegible] local action of the thermo-cautery, although liberally used, on the 8th (three days after the application of the thermo-cautery) declared the case desperate and decided unanimously to call me to try, as *ultima ratio*, the use of the serum.

When I saw the patient at 11 A.M. on the 8th he was in a state of coma. His pulse was rapid and intermittent and the temperature was 104°. For the last 24 hours he had passed very small quantities of turbid urine, which was found to contain a large amount of albumin. The microscopical examination of the sediment showed in addition many granular casts and red corpuscles. The right arm was enormously swollen; the œdema had spread to the shoulder and even to the edge of the great pectoral muscle. In the right axilla was a swollen gland of the size of a hen's egg, hard and extremely painful to the touch. All round the large necrotic zone due to the very free use of the thermo-cautery were several vesicles of varying size filled with a serous, slightly turbid liquid. From the fluid in them microscopic preparations and cultures in broth and in agar were made. 20 cubic centimetres of blood were drawn from the middle vein of the left arm at the bend of the elbow. From one portion of this blood microscopical preparations and cultures in broth and agar were made and from the other cultures in gelatin. After this I injected 150 cubic centimetres of anti-anthrax serum into the middle vein of the left arm. The microscopical examination of the exudation drawn from the vesicles showed the characteristic anthrax bacillus; that of the blood gave a negative result. Anthrax bacilli developed in all the tubes of agar and broth inoculated with blood; the gelatin plate cultures gave an average of 12 typical colonies of bacillus anthracis per cubic centimetre. This bacillus was then sensitised with anti-anthrax serum, which agglutinated it in the proportion of 1 in 30 in the space of an hour. It killed guinea-pigs of a weight of from 400 to 450 grammes in 72 hours with the characteristic symptoms. On the evening of the 8th I visited the patient again. About an hour after the inoculation of the serum he had had a slight access of dyspnœa, had been delirious, and had perspired profusely. These same manifestations, and especially the profuse diaphoresis, I remember to have observed almost invariably in cases of bubonic plague at the Hospital for Infectious Diseases at St. Paul after intravenous injections of large quantities of anti-plague serum. The pulse was less frequent and irregular than it was in the morning; the swollen gland was still hard and very sensitive to the touch. A second intravenous injection of 50 cubic centimetres of anti-anthrax serum was made. About two hours after the injection there was again profuse sweating. The patient passed a somewhat disturbed night. Urine was abundant. The patient on the morning of the 9th [illegible] in the early hours of the [illegible] vas sensibly improved. The pulse was [illegible] hat frequent; the temperature was 101°. The urine, abundant during the night, was limpid and there was a very slight trace of albumin, while the microscopic examination of the sediment obtained by centrifugalising showed but few granular casts and red blood cells. The œdema in the arm was considerably diminished; the axillary gland was less swollen and had almost ceased to be painful on pressure. I thought it advisable to continue the treatment with serum and injected under the skin of the abdomen 40 cubic centimetres of anti-anthrax serum. He had a quiet day, had many hours' sleep, and the kidneys acted freely. On the 10th his general condition was good; the pulse was normal and the temperature was 98·5°. The examination of the urine for albumin and for renal elements was negative. The œdema was confined to the forearm, round the large necrotic area caused by the action of the thermo-cautery; the axillary gland had ceased to be painful and had diminished to the size of a nut. I took 15 cubic centimetres of blood from a vein of the left arm. With a portion of the blood cultures in broth and agar were made and with the other part, after defibrinating it, I inoculated three guinea-pigs, two under the skin and the third in the peritoneum. All these tests gave negative results. On the 11th the patient had passed a very quiet night; the general conditions continued good, the examination of the urine showed nothing abnormal, the œdema had almost completely disappeared, and the gland in the armpit was hardly to be felt. On the 12th the patient's condition could not be better; he was very hungry and he had slept quietly. He might now be considered fairly convalescent and bore no trace of the severe infection he had been through beyond considerable weakness and the great wound opened by the thermo-cautery, the closing of which would naturally require a long time. I saw the man again after he was completely healed of his wound. He felt no further effects of his illness.

CASE 2.—The patient was a man, aged 27 years, a butcher at St. Paul. On the evening of Oct. 2nd, 1903, I was called in haste by Dr. F. Buscaglia to treat with serum a serious case of malignant pustule which he was then attending. The patient presented in the middle third of the flexor surface of the right forearm a characteristic pustule of the size of a two-centime piece with vesicles and surrounded by a broad violet zone. The whole of the forearm was much swollen; the epitrochlear glands were swollen and painful and in the right axilla was a swollen gland of the size of a pigeon's egg and very painful to the touch. The patient's general condition was somewhat serious. The pulse was frequent and irregular and the temperature was 103°F. The patient was very restless and complained of a burning sensation where the pustule was and of a sharp stabbing pain in the right axilla. He had passed very little urine during the preceding 24 hours; the urine was slightly albuminous; it contained no casts. The pustule was cauterised with the thermo-cautery, after which I made an intravenous injection of 80 cubic centimetres of anti-anthrax serum and a subcutaneous injection of 30 cubic centimetres in the abdomen. Preparations made directly with material taken from the pustule showed the characteristic anthrax bacilli. In the gelatin plate cultures, made with blood, appeared typical colonies with an average of seven colonies per cubic centimetre. This bacillus was characteristically sensitised and agglutinated by anti-anthrax serum; it was virulent when injected into guinea-pigs. On the 3rd he was very restless during the first hours of the night and perspired profusely. Towards morning he fell asleep and slept soundly for nearly four hours. His general condition was good; his pulse was regular, his temperature was 98·5°, and his kidneys acted freely. There was no albumin in the urine. Examination of the blood revealed no bacteria. The œdema of the affected arm was considerably diminished and the glands were almost normal in size; the axillary gland had diminished in size and was painless to the touch. Having obtained so sudden and decisive an improvement I thought it unnecessary to continue treatment unless anything unforeseen should again render it necessary. On the 14th the condition was excellent; he slept well; the œdema had almost completely disappeared and the glands were almost normal. The rapid improvement continued and after four days the man went back to work.

Examination of these cases clearly proves that, although isolated, they give stronger support to treatment with anti-anthrax serum than is to be drawn from a long series of cases of simple external anthrax successfully treated with anti-anthrax serum at the outset under conditions which leave it doubtful whether the usual local treatment destructive of the original seat of infection might not have been of itself sufficient to arrest the progress of the disease. In both the cases described the clinical and bacteriological examination confirmed the diagnosis of exceptionally severe general anthrax. In both cases, but especially in the first, the serum was used when the signs of serious general poisoning were chiefly apparent in the œdema which had spread far from the primitive seat of infection, in grave disturbances of the circulation, and in the evident lesions of the kidneys. Moreover, in the first and without doubt the most serious of the two cases the action of the serum was rapidly decisive when free cauterisation of the primitive seat of infection had completely failed. The double action of the anti-anthrax serum, antibacterial and antitoxic, is plainly evident, its antibacterial power shown by the immediate arrest of the progressive invasion of the organism by the bacillus, and its antitoxic power by the sudden improvement in the general condition of the patients and by the complete *restitutio ad integrum* of the renal function immediately after the use of the serum. I would insist on the necessity of treating such severe cases energetically by injecting into the veins large doses of the specific serum. For while, on the one hand, no justifiable opposition can be made to the treatment when carried out with proper caution, in the practical result its antitoxic action as shown pre-eminently in the first of the above cases was so immediate as to suggest rather a rapid neutralisation of the toxins circulating in the system than a stimulating action of the specific principles contained in the serum on the natural defensive powers of the organism.

Bologna.

CASE OF REMOVAL OF THE APPENDIX ON A ROYAL MAIL STEAMER AT SEA; RECOVERY.

By T. H. MACFIE, M.B., C.M. EDIN.,
SURGEON, ORIENT PACIFIC LINE.

OUR chief engineer, aged 44 years, was taken ill on May 10th, 1904. We were then four days out from Suez and Colombo, our next port of call, was distant six days. He complained of pain in the bowels and felt sick and disinclined for food. He had a normal pulse and a temperature or 99° F. The bowels had moved during the day and he had not vomited. There was tenderness in the right iliac fossa but nothing could be felt. He had been liable to attacks of pain in this region for some years and when a junior engineer he used to seek relief by leaning against some hot pipes in the engine room. These attacks had become gradually more severe; the last one, nearly two years ago, necessitated his being in bed for over a week. There was a history of two attacks of typhoid fever. On the 11th he complained of more pain. The morning temperature was 99·5° and the pulse was 100 and of fair strength. There were more tenderness in the right iliac region and some resistance on pressure but no tumour could be felt. The percussion note was clear and a rectal examination disclosed nothing. During the day he was given two three-grain calomel powders and later two rectal injections of warm water, after which the bowels acted. Dr. Milne of Sydney, a passenger by the steamer, kindly saw him with me at night. The temperature then was 103°, the pulse was 108, and the local condition remained unchanged. We agreed as to diagnosis and decided that operation was not then indicated.

We saw the patient again together on the morning of the 12th. He had passed a restless night and looked worn and anxious. The temperature was 104° and the pulse was 110 and weak. During the night he had had an attack of shivering and he had vomited twice. The local tenderness had not increased; if anything there was more resistance on pressure but still no swelling could be felt. We now advised an operation as the only means of affording relief and having obtained the patient's consent we made the necessary arrangements to have it done in the ship's dispensary at 2 P.M. We were then in latitude 10.20 N., longitude 59.30 E., distant some 1222 miles from Colombo. Excepting an atmospheric temperature of 92° the weather conditions were favourable and promised to remain so. Dr. Milne gave the anæsthetic (equal parts of chloroform and ether) and the chief steward (Mr. Rigden) assisted at the operation. The abdomen was opened by an incision four inches long, having for its centre McBurney's point. The omentum was not adherent and only a few adhesions were found round the cæcum. The appendix was found behind the cæcum with its free end pointing towards the umbilicus. It was two and a half inches long, very much inflamed, and its terminal portion was distended. About its centre there was a patch of yellow necrosed tissue of the size of a pea. It was packed round with sterilised gauze, ligatured half an inch from its seeming base, and cut off. In doing so some thick offensive material escaped on to the gauze packing. On examining the stump afterwards a portion, firmly adherent to the cæcum, was discovered. This was separated, a fresh silk ligature was applied, and this portion was then removed. The stump was touched with pure carbolic acid and the peritoneum was stitched over it with a fine silk suture. The abdominal wound was closed with three layers of sutures and a cyanide gauze dressing was applied. At night the temperature was 101° and the pulse 108 and he seemed comfortable.

The patient had severe chloroform sickness for three days after the operation; ice, hydrocyanic acid, chloretone, and creasote were tried without any benefit resulting. Rectal feeding was resorted to and this, with hypodermic injections of morphine (one quarter of a grain) and atropine ($\frac{1}{150}$th of a grain) kept the sickness in check. The temperature on May 13th was 98°; it reached 100° on the 15th, after which it fell to normal. The bowels acted on the 17th after the administration of three grains of calomel by the mouth and two rectal injections of warm water and turpentine. The wound was dressed on the 19th when two stitches were removed. On the 21st some discharge was coming from the wound where a stitch had been removed. On the 23rd all the stitches were removed; the discharge was less in amount and the wound looked healthy. It was dressed daily until June 3rd when it had quite healed.

I take this opportunity of thanking Dr. Milne for his ready coöperation during the critical period of the case, for without his assistance an operation would have been impossible.

A NOTE ON HOME-MADE "HUMANISED" MILK.

By C. BEAUCHAMP HALL, F.R.C.S. ENG.,
DISTRICT SURGEON TO THE CITY OF LONDON LYING-IN HOSPITAL.

VARIOUS methods have been from time to time brought forward and advocated for the rearing of artificially fed infants with more or less success. The following method of making home-made "humanised" milk, provided the instructions are properly carried out, has proved extremely satisfactory in my hands. I think the method is worth recording not only on account of its success but because every year the number of infants who have to be reared in this way seems to be on the increase. In a very small minority of these cases the mother has no milk or a very small quantity, or else it disappears on her resuming her everyday life. In a few cases breast-feeding has to be forbidden on account of breast troubles, anæmia or debility in the mother, or an inferior quality of milk. Very frequently, however, I find that the mother will not nurse her infant for one reason or another. It is our duty to endeavour that every infant shall develop into a healthy child as the result of our advice in this direction, whatever the cause may be of its being denied its natural food. For some years I have employed one or another of the methods hereafter described with slight modifications in practice. The results have been good provided the few simple rules are carefully followed.

The following are my reasons for preferring a home-made article. 1. Dairy-made "humanised" milk may after manufacture presumably become as easily contaminated as ordinary cow's milk, whereas if we start with sterilised cow's milk and guard against contamination we are certain of a pure article at the finish. Moreover, contamination is far more probable at a dairy than at home, if for no other reason because the process mus [illegible] 2. We cannot be certain of t [illegible] "humanised" milk or of the [illegible] and in my opinion the latter has an important bearing in cases of failure. 3. On several occasions I have had cases of diarrhœa following the consumption of dairy-made "humanised" milk which have ceased on substitution of the home-made article. 4. Expense in some cases has to be taken into consideration. Dairy-made "humanised" milk costs 8*d.* a pint. The home-made variety in addition to the ordinary price of cow's milk costs about ½*d.* a pint and occupies about 20 minutes a day.

As I have said before, mother's milk is the natural food of infants and it follows that as close an imitation of this natural food as we can [illegible] stitute for it. Syntheti [illegible] caseinogen, fat, sugar, a [illegible] together with water, and [illegible]; but—and this is one of the greatest faults of patent foods—there is an indescribable element lacking which no chemist or physician can manufacture. I refer to the natural element of freshness which gives to breast milk in a healthy mother preventive power with regard to rickets and infantile scurvy. Cow's milk, along with other natural foods, contains this fresh element and therefore every food for the artificially reared infant must have cow's milk as its basis. The artificially reared infant starts at a disadvantage compared with the breast-fed infant and the substitution of any other basis and absence of this fresh element mean sooner or later the production of anæmia, rickets, or scurvy. A bad start during infancy will always leave a lasting mark in the after race *for life.*

[illegible] habit of prescribing [illegible] I have stated above [illegible] to this food occurred, and as a few of the babies were of the flabby, anæmic type, without definite rickets, I sought out some different process of manufacture. Being convinced absolutely that in theory "humanised" milk was far and away the best food, it was in the practice—i.e., the manufacture of it—that I surmised the fault lay. My first object was to obtain a pure and trustworthy preparation of rennet and having succeeded in doing so to standardise it. My object in standardisation was to save unnecessary expense, owing to the difficulty in obtaining an absolutely pure article. The rennets on the [illegible] ariable preparations and this [illegible] preparations. Of these, some- [illegible] times the amount is required [illegible] milk as is required at other [illegible] which they are made may not [illegible] therefore, a powdered form of rennet is the best. This is purified and standardised. Formerly I used a powder mixed with two grains of bicarbonate of sodium, but now I believe the method is still further improved by making the powder into a compressed tablet, thus insuring accuracy. Each tablet, besides containing sufficient rennet to curdle half a pint of milk, contains one and a half grains of bicarbonate of sodium, half a grain of calcium phosphate, and five grains of lactose. The sodium bicarbonate is added to neutralise any lactic acid formation and consequent fermentation that might result in the hot weather. The calcium phosphate is added because rennet, like other ferments, acts better in the presence of a calcium salt, also because of its remarkable action in helping tissue formation in growing children. A certain quantity is present in normal milk and this extra quantity, although small, is beneficial. The lactose is added to make up the deficiency of this substance in cow's milk as compared with human milk. Hofmann advised the addition of 110 grains of lactose to each pint. The necessity of this large quantity is not apparent. When milk is curdled by rennet 75 per cent. by volume consists of whey, the rest being curds. Now whey contains every substance in the milk except fat and caseinogen and therefore it contains lactose. Human milk contains 5 per cent. of lactose and cow's milk 3·8 per cent. (Halliburton). From half a pint of cow's milk we obtain seven and a half ounces of whey, which necessarily contains 3·8 per cent. of lactose. By adding five grains of lactose to seven and a half ounces of whey and 10 ounces of milk a mixture is obtained containing the same quantity of lactose as that quantity of human milk would contain. The deficiency of fat which this mixture would contain (0·3 per cent., Halliburton) by admixture is made up for by skimming the half pint of milk that is to be curdled. These tablets then make a mixture almost identical with human milk and the instructions for their use I have ordered to be inclosed with the tablets.

The directions are as follows:—Boil or sterilise half a pint of cow's milk. Take another half a pint and skim it and add the skim to the first half pint. Crush a tablet and when the skimmed half pint has been heated to 100° F. add the crushed tablet, stir, and keep at about the same temperature for 20 minutes, separate the curd thus produced, and then boil the whey for two minutes. Add this whey to the first half pint and to this mixture add three ounces (six tablespoonfuls) of boiled or sterilised cow's milk. Soak all vessels used in boiling water before and after use. The quantities given in these directions make one pint. Mr. Felthouse of Highbury Park has manufactured the tablets according to my directions.

Compton terrace, N.

EXTRA-UTERINE GESTATION: A FULL-TERM CHILD REMOVED BY OPERATION FOUR MONTHS AFTER FŒTAL DEATH.

BY GEORGE E. WHERRY, M.C. CANTAB., F.R.C.S. ENG.,
SURGEON TO ADDENBROOKE'S HOSPITAL, CAMBRIDGE.

A HEALTHY woman, aged 38 years, came under my care in Addenbrooke's Hospital with an abdominal swelling of about the size of a pregnant uterus at nine months. The swelling felt firm in some parts and in others cystic or elastic. There was resonance in the flanks. On vaginal examination the os was soft and slightly patulous; there was no firm swelling in the pelvis. The nipples were large with a dark areola and exuded on pressure a small quantity of milk. There was a small, well-marked, supernumerary nipple, with a dark areola round it, situated about three inches in a line with, and below, the left nipple. The patient had had a child 20 years ago whom she nursed at her breast during six weeks until the infant's death. She was regular in menstruation since the loss of her child until May 21st, 1903. Since this date she had seen nothing except that about four months previously there was a discharge of dark blood during several days. In July she was examined by two medical men who told her that she was pregnant. She had abdominal pain and sickness, the breasts were swollen, and she had difficulty in passing urine. In August of the same year she noticed a tumour above the pelvis. In February, 1904, she felt movements in the swelling which had risen above the navel. There were intermittent pains in the abdomen and these symptoms lasted several days. She was visited by four medical men on Feb. 22nd as she was expecting to be delivered. She felt the movements up to March, when on the 4th of that month her mother died and she felt movements no more.

An operation under chloroform was performed on July 1st. An incision below the umbilicus encountered the placenta; beneath and below this a sac of dark fluid, not ill-smelling, was emptied. A child lying in the fluid, the left arm presenting and the head in the left iliac fossa, was delivered. The placenta was removed by blunt dissection and the cavity was cleared out with sponges. The sac was firmly adherent to the bowels and much of it was therefore left behind. The left tube and ovary were of about twice the natural size and firmly adherent to adjacent intestine. The other ovary and the uterus were normal. There was little bleeding. A gauze drain was used. The patient made a good recovery.

The child was a full-term male with perfect nails and the testes in the scrotum. It was slightly macerated in places but was not putrid and was but very little discoloured or altered in appearance from that of a stillborn child delivered from the uterus. The limbs and cervical spine were unnaturally flexed and twisted.

It may be reckoned that this infant grew to full term among the intestines and lay there dead during four months. Thus there was no hæmorrhage in "peeling" away the placenta. There was no putridity, probably from the fact that the placenta was nowhere adherent to the bowels but only to the abdominal walls. In this case if an operation had been performed by the ordinary incision during the life of the child it would have been difficult to deal with the hæmorrhage from the placenta. A lateral opening in the abdomen leaving the placenta untouched would have been the best procedure.

Cambridge.

A Mirror
OF
HOSPITAL PRACTICE,
BRITISH AND FOREIGN.

> Nulla autem est alia pro certo noscendi via, nisi quamplurimas et *morborum et dissectionum historias, tum aliorum tum proprias* collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv., Proœmium.

ST. THOMAS'S HOSPITAL.

A CASE OF FEMORAL ANEURYSM IN HUNTER'S CANAL; LIGATURE OF THE SUPERFICIAL FEMORAL AND POPLITEAL ARTERIES; CURE OF THE ANEURYSM; DEATH FROM CARDIAC DISEASE TEN WEEKS LATER.

(Under the care of Mr. H. BETHAM ROBINSON.)

THE patient, a man, aged 48 years, was admitted under the care of Mr. Betham Robinson into St. Thomas's Hospital on August 19th, 1901. His father had died from a burst blood-vessel. He himself had always been a healthy man, without any history of syphilis, but owned to indiscretions with alcohol during the last four years. 14 weeks before admission he had a bad attack of pneumonia. Four weeks before he began to have very great pain in his right thigh, lasting for hours at a time, for which various remedies had been tried without any relief. During the last ten days the leg had been very swollen, more than at the present time, and he had also noticed that the swelling in the thigh pulsated.

On admission there was a fairly large pulsating tumour occupying the middle third of the thigh (Hunter's canal) which was extremely painful and tender to the touch; the pulsation was expansile. The right dorsalis pedis artery was much weaker than the left. There was double aortic disease with cardiac hypertrophy, but no evidence of thoracic dilatation. The pulse was moderately water-hammer in character and the vessels were obviously thickened. A few days' observation showed him to have an irregular temperature, never exceeding 101° F.; as to the cause ulcerative endocarditis was questioned unless due to the local condition. Dr. H. G. Turney was certain that there was no state of lung remaining to account for it. There was no albuminuria.

As the aneurysm was of rapid onset and progressive, and so very painful, Mr. Betham Robinson decided to operate. On August 28th he ligatured the superficial artery at the apex of Scarpa's triangle; the vessel here seemed quite healthy and three floss-silk ligatures were used and tied by the Ballance and Edmunds method. Any idea of excising the aneurysmal sac, if entertained, would have been impracticable as the sac was too diffuse. The ligature temporarily stopped all pulsation in the sac but before the wound was stitched up it had returned with fair force. To combat this the upper part of the popliteal was ligatured, it being cut down upon just below the opening in the adductor magnus, which procedure was perfectly successful in stopping all pulsation. The limb was dressed and well bandaged in cotton wool. On the 30th considerable pain had still been present in the leg since the operation, but it was eased by morphine. The leg was fairly warm. The temperature remained irregular. On Sept. 4th the wounds were healed and all stitches were removed. There was no pulsation in the sac; the condition of the limb was good. There was slight pulsation in the dorsalis pedis. The patient complained greatly of pain down the leg which seemed especially referred to the area supplied by the internal saphenous nerve. On the 11th pulsation was very distinct in the dorsalis pedis. There was very great pain in the leg. The temperature was irregular, ranging from 98° to 101° F. On Oct. 11th it was stated that since the last note the pain in the leg had been just as severe; whether due to this cause or not the mental condition was very unsatisfactory. On the 14th, to try to remedy the severe pain down the leg, the internal saphenous nerve was cut down on at the upper part of Hunter's canal and one and a half inches of it were resected. On the 17th considerable relief of pain had followed the resection of the nerve, but unfortunately this proved only temporary as the patient now again complained of its severity and referred it particularly to the calf of the leg. His mental condition was most unsatisfactory, bordering on maniacal, so that it was difficult to estimate the real character of his pain. On the 19th, after being in a most excited state all the night, he said that he felt very much better. On the 21st he had been quieter during the last two nights and had been able to do without morphine. He was given paraldehyde but he slept very badly. He was getting very emaciated. There was still pain in the calf of the leg. On Nov. 2nd the patient was very restless and excitable. He still complained of great pain in the calf and feet. He lay with his legs drawn up and could not be made to straighten the right one. He died quite suddenly on the morning of the 5th from syncope.

Necropsy.—At the post-mortem examination the aneurysm was so much reduced in size as to appear as a slightly enlarged vessel with very thick walls and filled with clot. Extensive aortic disease was present. The left ventricle was dilated and hypertrophied. There were atheromatous patches on the mitral valve and atheroma of the aorta and coronary arteries. The spleen was very large and soft, with a superficial scar at one spot either of infarct or gumma. The kidneys were large and firm.

Remarks by MR. BETHAM ROBINSON.—Femoral aneurysms, or those occurring from that part of the vessel supported by muscles, are rare, and particularly so those strictly limited to Hunter's canal. They have been recorded involving both this part of the vessel with the popliteal in addition, the popliteo-femoral variety. In this case it was proved, as will be shown later, that the aneurysm was not of this type. Lisfranc, in a table comprising 179 cases, excluding the aorta, gives 18 from the femoral artery, not including those in the groin, but he does not state the exact point of origin or whether the popliteal was also involved.

In the treatment of the above case the use of compression was negatived from the associated aortic disease with its attendant mental irritability. The treatment adopted was the orthodox Hunterian operation; this was succeeded by immediate return of pulsation in the sac. To what was this rapid recurrent pulsation due? This is usually attributed to a free anastomosing circulation through a vessel communicating with the sac. Here it was very probable that the anastomotica magna did communicate with the sac, but the pulsation could not have b[illegible] why did ligature of the popli[illegible] arteries stop the pulsation? [illegible] is considered unlikely for pulsation to be transmitted to the sac through the lower end of the vessel, but yet in face of the facts it looks as if such were the case. We must suppose that there was such a free anastomosis between the descending branch of the external circumflex and the articular vessels already established that the heart's contractions were able to be transmitted to the contents of the sac.

It may be urged that the ligation of the popliteal artery was unnecessary, as the pulsation would have ceased in a short time, as is considered to be the usual sequel; it must be borne in mind that there was also a probability in the other direction and the pulsation was very free. The adoption of a novel and what seemed a more certain course of action did not appear to be fraught with any danger and was putting the patient in much the same position as in excision of the sac after ligaturing above and below.

The effect on the sac is worth noting. It will be remembered that the sac was an ovoid one of very rapid formation and the presumption is that with this dilatation there had been next to no deposition of hard clot. The soft clot shut up in the sac with the vessel's wall underwent such rapid shrinkage that at the necropsy ten weeks later the only evidence where the dilatation had been was a slightly dilated vessel with very thickened walls.

As to the cause of the aneurysm it would appear that it was embolic. There were old vegetations on the aortic valves and superimposed on this was recent endocarditis. The irregular temperature with pneumonia suggested that this was infective and the acute development of the aneurysm was in accordance with such a view.

The only other point for consideration is, What was the nature and origin of the severe pain in the leg? For a time I suspected the possibility of inclusion of the nerve in the ligature but the painful area was not defined enough; it was proved subsequently not to be the origin, because the nerve was shown not to have been included and resection of a portion of it did not remove the pain. It is possible that the attacks of pain were due to arterial spasm or arterio-sclerosis, the symptoms being allied to those met with in the condition of "intermittent claudication," first described by Charcot and more recently by Osler, Levy, and Riesman.

MANCHESTER ROYAL INFIRMARY.

A CASE OF ANEURYSM OF THE SUPERFICIAL FEMORAL ARTERY; LEAKAGE; LIGATURE OF SUPERFICIAL FEMORAL AND SUBSEQUENTLY OF PROFUNDA AND ILIAC ARTERIES WITH INCISION OF THE SAC.

(Under the care of Mr. G. A. WRIGHT.)

FOR the notes of the case we are indebted to Dr. W. F. Shaw, house surgeon.

The patient, a man, aged 53 years, a bricklayer, was admitted to the Manchester Royal Infirmary on Sept. 28th, 1903, suffering from a large [illegible] the left thigh. He had been i[illegible]s on his left thigh while he brok[illegible] first noticed a numbness in his left thigh about six weeks previously to admission and a month later had what he describes as "inflammation" in that thigh—that is, the thigh became swollen and dark coloured but settled down with rest. A short time after he had a similar attack and went to the infirmary.

On admission the patient was a healthy-looking man. There was a large even swelling on the inner and anterior aspect of the left thigh at the junction of the upper and middle thirds. Measured six inches below the anterior superior spine of the ilium the left thigh was 21½ inches in circumference and the right thigh was 18¼ inches. The swelling looked about the size of a small melon but its edges were ill defined, especially at the sides. The skin over it was smooth and not discoloured nor was it marked by any enlarged veins. The swelling was uniformly elastic and was not adherent to skin or bone; it had a slight expansile pulsation. There was no difference in the pulsation of the arteries of the legs below the level of the swelling. Aneurysm of the superficial femoral artery was diagnosed but the patient refused to be operated on, so was kept quietly in bed. On Oct. 13th, a fortnight after admission, he had severe cramp in the calves of both legs and the swelling was found to be increased greatly and very painful. He now consented to undergo an operation which was immediately undertaken.

The operation was performed under ether on Oct. 13th by Mr. Wright. A vertical incision about one and a half inches long was made, with its centre about one inch below Poupart's ligament. An artery, which was supposed to be the common femoral, was isolated and tied with double ligatures and a "stay knot." The tumour was still found to be pulsatile and on dissecting deeper another large artery was found. This was evidently the profunda, which was abnormally large and came off very high up, so that the artery first tied was the superficial femoral, not the common femoral. A ligature was passed round the profunda but not tied as pulsation had now ceased. The wound was closed and dressed and the patient was put back to bed with the leg wrapped up in cotton-wool and hot bottles were placed round it. The circulation in the toes was well maintained though pulsation in the arteries about the ankle could not be felt. On the 16th the ligature round the profunda artery was removed and on the 20th the sutures were removed, the wound being quite sound. The swelling in the thigh, however, had not gone down, though there was no pulsation to be felt in it. By Nov. 12th the swelling was softer but had not gone down in size, so an elastic bandage was applied with cotton-wool over the swelling. The patient refused to have another operation performed, so was sent to the convalescent hospital, the swelling in his thigh being then as large as on admission though not so hard and not pulsatile.

On Jan. 27th, 1904, the patient was readmitted as an urgency case, the thigh now measuring 24½ inches, as against 21½ inches when first admitted. The consistence was uniformly hard and elastic without any pulsation. There was slight œdema of the leg below the knee. No enlarged glands were present in the groin or the abdomen. There was no cough, hæmoptysis, or hæmaturia. The patient was pale and had evidently lost flesh since his discharge. The general diagnosis was sarcoma though Mr. Wright stuck to his original diagnosis of aneurysm.

Operation was performed on Jan. 29th by Mr. Wright. A vertical incision was made into the mass which proved to be a large aneurysmal sac containing old blood clot. After the clot had been cleared out some oozing took place from the walls of the sac; the profunda artery was ligatured [illegible] incision was [illegible] iliac artery [illegible]th a "stay [illegible]res and the sac was stuffed with iodoform gauze. The patient was put back to bed with the leg well wrapped up in cotton-wool and hot bottles placed round it. He did well after the operation, circulation in the foot being well maintained. A week after operation the stitches in the upper wound were removed and the packing was changed in the lower one. Unfortunately the lower wound became septic but cleared up in a few days under fomentations. The wound in the sac gradually healed and on March 4th the patient was discharged to the convalescent home with only a small sinus. He was seen in April with the wound quite sound. In July he returned; the site of the aneurysm was satisfactory, but he had apparently had an attack of cellulitis following thrombosis about the ankle. This had given rise to extensive suppuration in the leg and disorganisation of the knee-joint. Amputation was refused and he left the hospital in spite of all persuasion.

Remarks by MR. WRIGHT.—There were certain difficulties in this case which perhaps justify its record. It was difficult to persuade the man that his condition was serious and he conditions under which they live. And with regard to the disease it is pointed out that European immigrants, with a physique much reduced by tuberculosis and incapable of finding suitable work and wholesome food on arrival, are a grave source of danger to the persons with whom they associate. Such persons on whom pulmonary tuberculosis has taken firm hold should be deterred from going out to the colony or, at any rate, a sanatorium should be erected to which they might go on first landing for a short stay for the purpose chiefly of being educated as to their mode of life with reference to their disease. The birth-rate amongst Europeans was 29·31 per 1000; the death-rate was 12·90, against 14·40 for 1902, showing a reduction of 1·50 per 1000. As regards the excessive mortality in certain estates and mines which was brought to notice last year this has improved, the mortality figure having fallen well below the mean. Included in Dr. Hill's report are those from the health officers of various towns and districts of the colony. The whole volume gives us a concise account of the vast amount of good work that is being carried out by our countrymen in South Africa.

Social Diseases and Marriage: Social Prophylaxis. By PRINCE A. MORROW, M.D., Emeritus Professor of Genito-Urinary Diseases in the University and Bellevue Hospital Medical College, New York. London: Sidney Appleton. 1904. Pp. 390. Price 15*s.* net.

THE dissemination by marriage of venereal disease involves consequences which affect the health of the contracting parties, the lives of their children, and the peace, honour, and happiness of the family. The important relations of gonorrhœa with marriage have been practically ignored by the medical profession until lately; but we now know that in view of the extensive prevalence of the gonococcus, its conservation of virulence after apparent cure, and its tendency to invade the uterus and adnexial organs, with results often dangerous to life and destructive to the reproductive capacity of the woman, gonorrhœa overshadows syphilis in importance as a social peril. It is the object of the writer of this work to set forth the dangers introduced by venereal diseases into marriage and to indicate the most effective means to prevent these dangers or to limit and circumscribe their spread. This protective duty, which has for its object the preservation of the helpless and innocent from infection, devolves upon the physician in his capacity as sanitarian and guardian of the public health. In safeguarding marriage from the dangers of venereal diseases the physician becomes the protector of the wife and mother and the preserver of future citizens to the State. The situations created by the introduction of venereal diseases in marriage are many and complicated; in dealing with these situations there must be not only a thorough knowledge of these diseases in all their relations but also a knowledge of human nature.

The book is divided into three parts. The first part deals with the biological, sociological, and medical aspects of the whole question, including humanitarian considerations, and pointing out the consequences of venereal diseases when introduced by marriage upon the wife and the offspring. The social miseries thus engendered are detailed as well as the attitude of society towards these evils and the responsibility of the medical profession. The second part treats of syphilis and marriage and the third part discusses fully social prophylaxis. The author supports Neisser in his contention that gonorrhœa is a more potent factor in the depopulation of countries even than syphilis. Neisser regards gonorrhœal infection as responsible for more than 45 per cent. of sterile marriages. In the section on Social Prophylaxis the causes of prostitution are examined and certain remedies are suggested, special prominence being given to moral and educational influences, which promise to be the most efficient and are at the same time immediately available.

The most practical question discussed is when a physician may permit a man to marry who has previously contracted gonorrhœa or syphilis. In general terms it may be said that the duration of the period of prohibition is measured by the period during which the diseases are contagious and transmissible. In the case of gonorrhœa the risks of contagion may, the author holds, be determined with comparative certainty by a bacteriological examination of the urethral secretions. If gonococci are present the patient should not marry; if absent he may. While observation shows that in the large majority of cases the contagious activity of syphilis and its susceptibility to hereditary transmission cease after the third or fourth year, the arbitrary designation of a period of four years from the first appearance of the chancre, as being perfectly safe for a syphilitic man to marry, irrespectively of the type of the disease or the character of the treatment, is unwarranted by science and condemned by clinical experience. Each case must be studied on its individual merits. It is chiefly in the nervous system that search must be made for the indications which point to a grave and menacing character of the syphilitic diathesis.

Though primarily intended for the medical profession, there are several parts of the book which may be studied with the greatest benefit by the public. Most important questions are answered in it on sensible lines, questions that are constantly being asked of the family medical adviser who will find in these pages much that will strengthen his opinions and add to their value.

LIBRARY TABLE.

A Few Notes on the Bacteriology and Pathology of Mediterranean Fever. (Reprinted from the "Health of the Navy" for 1902.) By R. T. GILMOUR, Surgeon, R.N., M.R.C.S. Eng. Pp. 10.—Mr. Gilmour has been attempting to isolate the micrococcus Melitensis from the blood and urine of patients suffering from Mediterranean fever for the following reasons: (1) that in wet specimens of these fluids he had come across very small motile cocci; and (2) that he did not see how the coccus could reach the liver and spleen without passing through the blood stream. After experimenting with small quantities of blood and media he concluded that large quantities of both must be used so as to dilute down the agglutinins and alexins. At first he obtained the blood from men with bad attacks of fever; later he cultivated the coccus from the blood of patients suffering from relapses. Out of 14 cases experimented with a pure culture was obtained from seven; three, although containing small cocci, would not give any growth and five were contaminated. Mr. Gilmour gives a short clinical history of each case. He states that the earliest date at which the serum will agglutinate after inoculation is doubtful in man. With regard to what is the lowest dilution that may be accepted as a positive reaction in Mediterranean fever he thinks that if a serum gives a good reaction $\frac{1}{10}$—that is to say, well-marked clumping—it may be taken as a positive reaction, especially if the agglutination is immediate or within half an hour. The highest dilution in which he has obtained a reaction is $\frac{1}{3000}$. The paper closes with post-mortem notes on four cases of Mediterranean fever.

Ueber den Schluckmechanismus. (On the Mechanism of Swallowing.) By Professor J. SCHREIBER, Königsberg. With 22 figures and two plates. Berlin: A. Hirschwald. 1904. Pp. 92. Price 3*s.*—This dissertation on the mechanism of swallowing is an amplification of some papers on the same subject that appeared in vol. xlvi. of the *Archiv für Experimentelle Pathologie.* The experiments of

Kronecker and Meltzer in 1883 on the swallowing of fluid and semi-fluid masses had apparently at last brought something like a settled statement regarding this act, which since the time of Haller has been considered as one difficult of explanation. Finality is not yet reached, for Professor Schreiber does not agree with Kronecker's view that the mylohyoid by its contraction is the chief agent by means of *which fluid and semi-fluid matter is "shot down," almost* squirted, from the mouth into the stomach. By means of careful experiments on man and by recording the movements of an object while it is being swallowed and by taking at the same time a record of the changes visible in the neck —the latter the author calls a "deirogram"—it is concluded that many muscles are concerned and coördinated for the bucco-pharyngeal act. While the mylohyoid facilitates the swallowing movement it does not begin the reflex act. The whole act of swallowing is compared to the *phases of a cardiac beat and a diagram is given to show the* stages and their duration. The actions of the constrictors of the pharynx and œsophagus are fully given and it is shown that the term "cardia" in the physiological sense should be applied to the lowest part of the œsophagus; it is rather an epicardia which closes the œsophagus towards the stomach. The author concludes that the force expended in the act of deglutition in man is very slight. This suggestive work will beget reinvestigation of the subject.

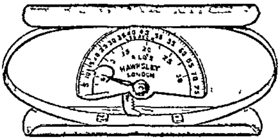
Easily Grown Hardy Perennials. By GEORGE H. VOS, M.B. Cantab. London: W. H. and L. Collingridge. Pp. 476, illustrated by 255 reproductions of photographs. Price 5s.—To those who have gardens and love flowers and have but little time to devote to gardening, the cultivation of hardy perennials affords pleasurable and delightful results with a minimum of trouble. Moreover, hardy perennials can mostly be propagated with ease by simple division and many require but little care, it suffices to leave them in the ground year after year. Indeed, we learn that Dr. Vos has in his garden quite 200 different species of hardy perennials, which reward him with fresh flowers all the spring, summer, and autumn, and this practically without any digging or planting. Dr. Vos has been very successful with the photographs illustrating his work, as the result of special treatment the flowers stand out in bold relief. And he has been no less *successful in making quite clear to the amateur what he is* to do, and how and when he is to do it, if he would provide outdoor flowers during almost the whole of the year.

New Inventions.

A STANDARD DYNAMOMETER.

THE old dynamometer of Duchenne has given place entirely to the oval form of Charrière. It is now supplied by many instrument makers and it is rare to find that any two dynamometers of similar aspect correspond in their results. They are still made with two scales, each in kilogrammes, but I think that not more than one person in a hundred of those who use such an instrument know that the outer scale is alone intended to represent the effect of pressure in the hand. The inner scale is designed to indicate the effect of traction from the two ends of the oval spring; it is practically never used for this purpose, for which it is indeed useless, because no effort thus applied can move the index through a fifth of the scale. The divisions on the inner scale really represent the effect of pressure. But the result is that some observers record from the outer and some from the inner scale without concerning themselves with the fact that 40 kilogrammes of the inner scale correspond to 105 of the outer. This, with the variations between different instruments, destroys all possibility of comparison between records. The ordinary form of this dynamometer is also most uncomfortable in use; a strong grasp is often painful.

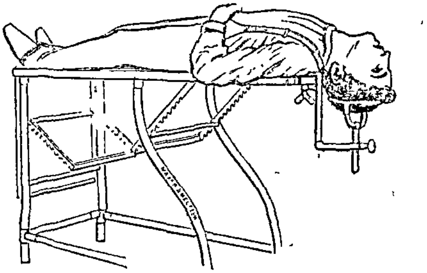
In the new instrument discomfort is prevented by a straight hollow piece of metal, semicircular in section, on each side of the oval spring, so that any force can be applied to it without discomfort. It has a further advantage in preserving the index from interference by the fingers. A *still more important feature which justifies the term* "standard" is that every instrument *is separately graduated and the scale specially engraved on each. It is clear* that only thus can trustworthy and comparable observations be secured. No attempt to produce a number of similar oval springs can result in instruments closely or even approximately the same. Every instrument for clinical observation should possess as much exactness as can reasonably be obtained and I think that this will be found true of the "Standard Dynamometer," which is made by Mr. T. Hawksley of Oxford-street.



Queen Anne-street, W. W. R. GOWERS.

A HEAD-REST FOR POST-NASAL OPERATIONS.

I HAVE found the head-rest here figured most convenient in the removal of post-nasal growths and for operations within the nostrils. The "hanging head" position over the end of the table, as ordinarily maintained, in my opinion seriously impedes respiration owing to the extremely *strained condition of the anterior neck muscles. My head-rest* overcomes this difficulty and dispenses with the need of an assistant to steady and to support the patient's head. The operator sits at the end of the table, beyond the patient, and does his work in a more deliberate, satisfactory, and safe manner than is possible by other methods, while at the same time the risk from any anæsthetic is considerably diminished. (Personally, I prefer chloroform.) The head-rest is easily clamped on to the end of an ordinary kitchen table, while the "rest" itself may be quickly raised and lowered. It should be kept low to allow of full extension of the neck. A towel thrown over it after it is fixed in position will prevent soiling by blood. The whole apparatus is in parts for convenient portability in one's bag. It will also be found useful in operations on the roof of the mouth and upper jaw, in excision of the larynx, and in endoscopic examination of the œsophagus. I have designed for ready use with the head-rest a simple folding chloroform mask on which a fresh piece of lint or domette may be clamped at each operation. The head-rest has been made for me by Messrs. Mayer and Meltzer of London and Melbourne.



Melbourne. FRANK A. NYULASY.

THE LANCET.

LONDON: SATURDAY, AUGUST 6, 1904.

The British Medical Association: The Address in Surgery.

In the Address in Surgery Sir William Macewen discussed two separate subjects upon which he was well qualified to speak. In the first place he discoursed on the localisation of abscess of the brain, pointing out that the view formerly held that cerebral abscess was generally pyæmic in origin implied that it was produced by embolism of infected portions of clot. It is true that an abscess of the brain can result in this manner but it is very exceptional, for in the great majority of instances the septic cerebral processes arise by direct extension from primary pyogenic lesions of the skull bones. The recognition of this fact gives the surgeon great assistance in diagnosing the position of an intracranial abscess, for if the position of the primary septic focus is known the situation of its dependent abscess must be limited to a comparatively small portion of the brain. Thus, if, as is very commonly the case, the primary focus is disease of the middle ear the surgeon can be certain that the resultant abscess, if symptoms point to an abscess, will be found in the corresponding temporal lobe or in the cerebrum in touch with the infected path. We now know that if the septic organisms enter the cranial cavity by way of the internal auditory meatus they will give rise to a basal meningitis and not to an abscess; at least it may be said that it is extremely rare for a cerebral abscess to follow septic invasion of the cranial cavity by this path. The explanation of the fact that meningitis follows sepsis of the internal auditory meatus is that the expansion of the membranes of the brain, which ensheaths the nerves in this canal, dips into it, and thus the meningitis first appears in the meatus and thence spreads to the base of the brain. In this connexion it is of great interest to note that basal tuberculous meningitis may be the result of extension of disease from the middle ear along the same tract, the tubercle bacilli spreading from the middle ear along the internal auditory meatus to the membranes of the brain. There is yet another way in which tuberculosis of the middle ear may threaten life. The tubercle bacilli may surround and invade the neighbouring sigmoid sinus and thus may be carried all over the body, setting up a miliary tuberculosis.

A second subject dealt with by the lecturer is of no small practical importance. It is the question of the most suitable materials for ligatures and sutures. The diversity of practice in this respect is exceedingly great and the surgeon has a very wide choice. Silk and catgut have been before the profession for many years and both still are widely used. Metallic sutures were much in vogue 20 years ago but they are very little used at present for anything but suturing bones, and it is rarely indeed that silver stitches are used for the skin. Kangaroo tendon was introduced and it is even employed now by many for special purposes, as in the radical cure of hernia, though it is rumoured that much of the material sold under that name is derived from the more obvious ox. More recently silkworm gut has been brought forward and is now very largely used, especially for skin sutures. Threads composed of linen and cotton have also been praised but they are very little employed in this country. There are many considerations which should weigh with surgeons in the choice of ligatures and sutures. The first is undoubtedly that the material of which they are composed should be capable of being rendered absolutely sterile, for if this cannot be done any other virtues which they may possess are of no effect. As Sir William Macewen points out, there are two other requirements which ligatures and sutures should fulfil. They should be capable of resisting absorption as long as is needed for the complete union of the surfaces which they hold in contact, whether these be the edges of a skin wound or the walls of an artery which has been tied, and they should then be capable of speedy and complete absorption when their work is done. For if, as in the case of a silver suture, the stitch resists absorption indefinitely, or even for a long time, it can only act as a foreign body, harmless perhaps as it is aseptic, but also useless and always liable to set up irritation. The mere presence of an aseptic body in the midst of living tissues tends to cause absorption of the surrounding structures and in this way also harm may be done by persistent ligatures and sutures. The edges of wounds in the skin in healthy subjects usually require to be maintained in contact from seven to 14 days, but this is only if there is no tension, for if there be any force tending to separate the edges of the wound a longer time will be required. Where the suture has to overcome the force of muscles or tendons at least three weeks should be allowed. In the case of bones still longer is required to insure complete consolidation, for the forces which have to be overcome are much greater, especially when leverage is brought to bear on the suture, as in long bones; therefore, about four weeks are needed in the case of most sutures of bones. Even in bone, however, after a certain time the constricting band ceases to maintain contact between the fragments, and unless bony or fibrous union has occurred the suture will not prevent the separation of the fragments. Applying these desiderata to the materials in common use we find that silk is for all practical purposes non-absorbable. Silkworm gut and hair are not absorbed at all, and have been removed even seven years after having been introduced and when examined microscopically they have shown no sign of even commencing absorption. The lecturer, after discussing other materials which have been employed, came to the conclusion that only catgut answers the needs of the surgeon. It must be selected with care, as possessing the needed strength and smoothness. Further, the process of hardening must not prevent that invasion of leucocytes which is necessary for its absorption. A mixture of glycerine and a watery solution of chromic acid seems to answer best as a hardening agent; the gut produced is soft and pliable and the resistance to absorption can be increased or diminished, so that the time it shall persist in the tissues can be regulated with a great degree of accuracy. It may be stored in a carbolised glycerine solution and in the course of months or years its resisting power tends to increase.

The rate of absorption of catgut sutures varies somewhat, according to the nature of the tissues with which they are in contact. Should the part be very vascular the piece of catgut will undergo absorption rapidly, but if the tissues possess only a few vessels the rate of absorption will be markedly less. Age, also, as might be expected, has an influence, and in the young the rate at which the catgut is absorbed is appreciably greater than in the old. When a suture is tied too tightly the rate of absorption is much diminished, but the suture by its pressure leads to absorption of the compressed tissues. Should a stitch become septic it will be absorbed with extreme slowness. By the use of absorbable sutures it becomes unnecessary to disturb a dressing for the removal of sutures after they have served their function, for the part of the suture within the tissues will be absorbed and the part outside will fall off when the dressing is finally removed. It will be seen upon reference to Sir WILLIAM MACEWEN'S address, which we publish in another part of this issue, and from the remarks that we have made upon it, that the lecturer did not so much attempt to tell the audience new things as to impress upon them broad lessons in diagnosis and minor details in treatment that will be of practical service to them.

Infantile Mortality.

MR. J. THEODORE DODD, in a recent issue of the *Municipal Journal*, has approached a very interesting problem in sanitation and vital statistics by the suggestion that high rates of infantile mortality are intimately connected with the policy of certain boards of guardians in confining outdoor relief, even medical relief, within the narrowest possible limits; and he puts forward some figures which, at the very least, appear to render his contention a probable one. He quotes Sir WILLIAM CHANCE as his authority for the statement that in St. Pancras, by merely insisting upon applicants for medical orders attending before the relief committee of the South District, their numbers went down from 4246 on Dec. 31st, 1899, to 2280 on the same day in 1901, a reduction of 46 per cent. in two years only. If Mr. DODD'S views are correct, and if any reliance can be placed upon a single example, we ought to have here a case precisely in point. According to the returns furnished to the London County Council by its medical officer of health, Mr. SHIRLEY F. MURPHY, the infantile mortality of St. Pancras—that is to say, the deaths of infants under one year of age—averaged 157 per 1000 births for the ten years 1885 to 1894. For the six years from 1893 to 1898 inclusive the numbers per 1000 births were respectively 172, 145, 174, 168, 168, and 170, or an average of 166. We do not learn when the curtailment of medical orders was commenced but it was operative during 1901, in which year the infantile deaths per 1000 were only 154, and we may presume that it was also operative during 1902, when the number fell to 147, the lowest so far recorded. We cite these figures, not as justifying a conclusion either way, but as showing that other factors must not be omitted from consideration. Mr. DODD gives a list of metropolitan unions, with a word descriptive of the policy in respect of outdoor relief adopted by each in 1902, but he does not tell us how long that policy has in each case been pursued. He gives also the infantile mortality in the same unions for the ten years 1881–90 from the Registrar-General's returns and the table, as a whole, certainly displays the connexion which he thinks may be established. For its completion it obviously requires a statement in each case as to how long the "outdoor" or "indoor" policy has been predominant, to what extent it has extended to orders for medical relief as well as to relief of other kinds, and what was its immediate as well as its ultimate effect, if any, upon the infantile mortality within the union. Tables containing these facts would also require correction by reference to infantile mortality in hospitals or institutions and to the localities in which the fatal illness commenced or was contracted, as well as by an examination of the current rates in these localities and of the probable explanation of them. The tables furnished by Mr. SHIRLEY MURPHY present not only a curious sameness of infantile mortality in many districts but also fluctuations which break this sameness and for which it is by no means easy to account. Thus, for example, the infantile mortality of London as a whole stood for many years at about 160, but in 1893 it fell to 143 and immediately thereafter rose to the customary point. With the beginning of the present century it again fell and in 1902 was only 139. The question is complicated by the adoption of new district boundaries which render the tables of former years difficult of comparison with more recent ones; but, with all due allowance for this source of confusion, there seem to be many anomalies difficult of explanation. The Strand union is described by Mr. DODD as having a decidedly "indoor," and the Holborn union as having a "slightly indoor" policy and a comparison between the two does not support his suggestion. From 1885 to 1894 the average infantile mortality of the Strand was 200, and that of Holborn was 204 per 1000. The former had fallen to 171 in 1898, the latter rose in the same year to 221 and has since fallen to 129. Verily, Sir ROBERT PEEL'S famous dictum should be remembered and we must admit with him there is nothing so misleading as facts, except figures.

Our chief difficulty in accepting Mr. DODD'S opinion that a scanty issue of orders for outdoor medical relief may be productive of infantile mortality depends upon a doubt how far such relief is likely to be efficacious in the treatment of infantile disease. If the same proposition were advanced with regard to adults we should think it a probable and reasonable one. But the diseases of infants are largely due to want of breast-milk, to scanty and improper feeding of other kinds, to exposure to cold, to life in a vitiated atmosphere, and, generally speaking, to conditions against which their tender frames are unable to strive. Such conditions would seldom be relieved by a visit from the medical man, and the advice which it would be his duty to give with reference to them would only in a very few instances be effective. For the action of medicine in such cases there is but little scope and removal to a hospital would seldom be practicable. The function of the medical man would almost be limited, we greatly fear, to certification that the death was so far due to natural causes as not to reach the current standard of criminality. We should be inclined to regard at least as an enthusiast any person who really expected the visits of the parish medical officer, even if he were obtainable without the formality of an order at all, to exert any powerful influence over the rate of infantile mortality in his district. The late Sir RICHARD QUAIN was once giving evidence as to the testamentary incapacity of the maker of a disputed will. In reply to the question what was the principal indication of insanity displayed by the deceased, he replied that it was "his unwavering faith in the efficacy of the medicines which I prescribed for him." This is occasionally quoted as a proof that the great therapeutist had no belief in the healing power of drugs. But the real significance of Sir RICHARD QUAIN'S remark was that it was unreasonable to expect drugs to do their full work when all the circumstances of the patient's environment were ranged against them. And thus it is in the matter of infantile mortality. It is not belittling the efforts of the parish medical officer to point out that neither his medicine nor his advice can operate effectively in many instances against the general causes of infantile mortality.

On the merits or advantages of the "indoor" policy as a whole we are not prepared to express an opinion; but in relation to the issue of orders for medical relief it might easily become exceedingly injurious to the poor and very costly to the ratepayers. It is true, of course, that there are among the poor, as among the rich, a large number of persons who suffer from some kind of gastric or abdominal discomfort which a little alkali and a dose of some cordial tincture will for a time relieve. Such persons are the chronic patients of every good-natured medical man, and the perpetual worries of every relieving officer. They probably receive no permanent benefit but their miserable lives may be made less miserable and they are proper objects of compassion. Very likely they are of indifferent character. They take a little gin if they can get it, and then, as Bishop EARLE says, to drink and to be drunk is all one. A measure of restriction directed against such people is hardly compatible with the exerciseof Christian charity. There is, however, far worse behind. The fact that a given board of guardians discourages the issue of medical orders and places difficulties in the way of applicants for them has a distinctly deterrent effect. Those who need them do not apply. The application is put off until to-morrow in the hope that the sufferer may be better. The morrow comes and he is worse. The natural result may be that a widow and orphans become chargeable upon the parish and for this the so-called "policy" is to blame. The claim of persons falling within any proper definition of poverty to a medical order should, we think, be absolute and indefeasible; and the duty of rejecting the applicants whose illnesses were trivial or unreal should be a distinctly medical one, to be discharged as a matter of professional responsibility. It cannot be safely committed to boards of guardians.

The Surgery of the Pancreas.

THE progress of surgery is regularly continuous. It is only now and then that we can note an advance that is really epoch-making, to use a much abused expression, yet steadily year after year the progress continues. There is a very natural tendency with most of us to imagine that we have at last reached finality or at least that we have come within sight of it. In many works of surgery the author expresses the feeling that much more cannot be done, inasmuch as we have reached the Ultima Thule of surgery. The late Sir JOHN ERICHSEN, a most able surgeon and philosophical thinker, has well expressed this feeling. He says in his "Science and Art of Surgery": "I cannot leave this subject without an expression of admiration at the great advance that has of late years been made in the treatment of diseases of the abdominal viscera by surgical operation and a recognition of the merits of those surgeons who have led the advance in this department of our art and of the vast importance of the results achieved by them. But whilst thus freely recording my admiration for the successes that have been obtained, I must add a few words of caution to aspirants for distinction in this great field of practice. I would venture to remind them that an operation is not necessarily justifiable because it is practicable; that every act of operative audacity is not a triumph of sound and legitimate surgery, and that a patient's life may possibly be prolonged on conditions less tolerable than death." And again: "Operative surgery, like every other art, can be carried only to a certain definite point of excellence. An art may be modified, it may be improved, but it cannot be perfected beyond certain attainable limits. And so it is, and, indeed, must be, with surgery. There cannot always be fresh fields for conquest by the knife. There must be portions of the human frame that will ever remain sacred from its intrusion—at least in the surgeon's hands." There is doubtless a strong element of truth in these sentences. Every modification is not necessarily an improvement; every new operation is not necessarily an advance; and in so far as Sir JOHN ERICHSEN'S words imply absolute disapproval of reckless surgery we can all endorse them as readily now as we did when they were written. But we must recognise that there are possibilities of progress invisible to us and that methods almost incredible now may become mere commonplaces to succeeding generations. In short, as no one can say what the "attainable limits" of surgery may be, the possibilities of surgery must remain unlimited.

In THE LANCET of July 9th, p. 106, we quoted a paragraph from THE LANCET of July 8th, 1826, in which Dr. CLUTTERBUCK in a lecture dealing with the diseases of the pancreas, delivered nearly 80 years ago, said: "Little need be said upon this subject because it is hardly possible to discover the existence of disease in this organ during life so as to distinguish it from that of the neighbouring parts." We have advanced very far from the state of knowledge exhibited in this excerpt both in the medicine and surgery of the pancreas, yet the greater part of this advance has occurred within the last ten or 15 years. For instance, in a valuable Dictionary of Surgery published in 1886 the word "pancreas" does not occur as a heading. From the medical aspect various morbid conditions of this organ are now known, but most of the work on the subject is recent. Dr. W. HALE WHITE collected all the cases of disease of the pancreas found in the post-mortem examinations at Guy's Hospital during the years from 1884 to 1897. During this period there were 6708 necropsies and in 142 of these the pancreas was found to be injured or diseased—that is, in over 2 per cent. of all cases. We now know, from these observations and those made by many other physicians and surgeons, that the pancreas is liable to acute and chronic inflammation. Of these the more important seems to be the acute form, for with its violent onset, the severe abdominal pain, the marked constipation, and the vomiting it is very liable to be mistaken for acute intestinal obstruction, and in several cases the abdomen has been opened under the influence of this erroneous diagnosis. The pancreas is also liable to a peculiar condition of "fat necrosis" and this morbid state may appear even in tissues at a distance from the pancreas itself. Hæmorrhage in disease of this organ is also not rarely met with, especially in connexion with acute pancreatitis. Primary malignant disease of the pancreas may occur and is generally first manifested by the occlusion of the common bile-duct and the gland is also not rarely involved by the extension of malignant growths from other organs. Syphilis and tubercle may also involve the pancreas and calculi are occasionally found in the duct of Wirsung. Cysts of the pancreas are also not uncommon, though the name has been somewhat loosely applied so as to include a localised ascites of the lesser peritoneal sac and cysts of the transverse mesocolon and omentum. The columns of THE LANCET for the last ten years have borne witness to an increasing knowledge of the pathological conditions to which the pancreas is liable.

Although we are now acquainted with many varieties of pancreatic disease, it is an unfortunate fact that many of the conditions are but little amenable to treatment. Medicinal therapeutic measures are of almost no value, but surgery is capable of affording relief in some at least of these morbid states. The rise of the modern surgery of the pancreas may certainly be traced to the publication in 1885 of a paper on the Surgical Treatment of Pancreatic Cysts by Dr. N. SENN of the United States. This was the first systematic account of the pathology of the organ, and Dr. SENN showed that it was possible not merely to diagnose with a fair amount of certainty the existence of a cyst of the pancreas but also that it was possible to treat it by draining without any very great risk to life. This is the chief operation performed on the pancreas, and it has been now performed sufficiently frequently for us to look upon it as firmly established. For malignant disease of the pancreas surgery can do but little. It is true that portions of the viscus have been removed when affected by extension of disease in the operation of excision of neighbouring malignant growths; and, indeed, in 1884 BILLROTH removed a cancer of the pancreas and the operation was followed by recovery. RUGGE also has been equally successful, but diagnosis of the condition sufficiently early to justify the operation is so very unlikely that it can hardly be considered feasible, though there is nothing in the operation itself to prevent it being attempted. To relieve a few of the symptoms of malignant disease of the head of the pancreas, such as the biliary obstruction which is almost always present, something can be done. Cholecystotomy or cholecystenterostomy may be performed, and though the statistical results cannot be said to be favourable yet in a few cases relief has been afforded; and should a chronic pancreatitis have been mistaken for malignant disease of the pancreas it is not impossible that one or other of these operations may prove to be productive of permanent benefit, for gradually the occlusion of the ducts may cease and the normal channel being established the abnormal opening may close. Calculi, as we have mentioned, are sometimes found in the pancreatic duct and in structure these resemble the calculi of the submaxillary gland. They may be single or numerous—in one case 300 were discovered—and successful removals have been several times effected. Chronic pancreatitis has been recognised by Mr. MAYO ROBSON as a fit condition for surgical interference and success has attended the draining of the pancreatic duct in such cases. From all this it is clear that our knowledge of the pathology, diagnosis, and treatment of lesions of the pancreas vastly surpasses the knowledge of a few years ago. How much further medical science may proceed in this direction no one can say; but there are limitless possibilities in the future of surgery, and the gap between Dr. CLUTTERBUCK'S knowledge and the knowledge of to-day may be smaller than the gap that will be found between our present teaching and the teaching of 80 years hence.

Annotations.

"Ne quid nimis."

NEWSPAPERS AND INCITEMENT TO CRIME.

IN the House of Commons on August 1st the Home Secretary was asked whether his attention had been called to a recent Old Bailey case of counterfeit coining in which the prisoner admitted that he had learnt how to make counterfeit coin from a full description of it in a daily newspaper by a criminal. Further inquiry was made whether, in view of the opinion expressed by the jury and by the Common Serjeant condemning the action of such newspaper, the Home Secretary could take any steps to prevent these facilitations of crime in future. The Home Secretary in his reply said that he had consulted the Common Serjeant, with whom he fully agreed as to the mischievous tendency of the article. He added that he considered the newspaper in question deserving of the gravest censure and that the whole question of incitement to crime by means of such articles is receiving the attention of the Home Office and of the Director of Public Prosecutions. This is good hearing and we earnestly hope that the phrase "receiving attention" is not a euphemism for shelving the question. We hope also that when the Home Office and the Public Prosecutor act they will act swiftly in one obvious direction. It is to the credit of the British press that incitements to crime seldom appear in the body of a journal, but the case is very different with the advertisement columns. All our readers will remember the numberless advertisements of pills or potions which, although they simply professed to cure "irregularities" in females, were really intended to be used as abortifacients. The insertion of such advertisements is a direct incitement to crime. And although, since our revelations and certain criminal proceedings for blackmail, they have become much less frequent, offenders do still exist and are still able to find newspapers willing to abet them in their disgusting courses. It makes no difference that in the majority of cases the "female remedies" would have no effect either in restoring the menstrual flow or in procuring abortion. The harmlessness of the potions places the advertisers and the newspapers which insert the advertisements in this dilemma. Either there is an incitement to crime or money is being obtained under false pretences. Quite enough specimens of these advertisements have come before us recently to make it clear that interference by the Home Office is urgently needed, while there are other classes of advertisements to which the official attention might be turned. The various drink "cures" and recipes for the restoration of "vitality" are in some cases dangerous swindles, and light turned upon the methods of some of the advertisers would considerably surprise the public. Revelations made in a medical journal do not come within the purview of the victims.

"FOURTH OF JULY" TETANUS.

IN the *Journal of the American Medical Association* of June 18th of this year is a special article entitled "The Prophylaxis and Treatment of Fourth of July Tetanus." After the annual celebration of that anniversary a large number of cases of tetanus occur as a consequence of the premature explosion of blank cartridges and fireworks. Last year no less than 406 deaths from this disease took place as the result of accidents sustained on the "Fourth." A mortality of over 95 per cent. in these cases indicates the futility of the treatment employed. The fatality of traumatic tetanus quoted in text-books gives 70 to 80 per cent. of deaths, therefore there is reason to believe that in the tetanus following wounds produced by blank cartridges there are fewer cases that recover. The reasons suggested for this high mortality are the youth of the patients and the unusually favourable conditions offered the bacilli by the blank cartridge wounds, so that the organisms multiply rapidly. Antitoxin was used in a considerable proportion of the fatal wounds, so that it would appear that this remedy is very limited in use in spite of its great experimental efficiency in animals and its considerable prophylactic value. Undoubtedly the earlier in the case that the antitoxin is used the better, but as a rule it is not given until the convulsions are well developed, at which time the disease has been in progress from five to 12 days. The following method of treatment, however, in the hands of those who have tried it has yielded more promising results. As soon as possible after the patient is seen general anæsthesia should be produced and the wound cleaned most carefully in order to prevent further formation and absorption of the toxin. Free drainage and access of air should be secured by loose but complete gauze packing. Before consciousness returns, or even before the operation is commenced, antitoxin should be administered. By far the best results which have been reported were obtained by those who have injected the remedy into the spinal canal. The plan adopted is to introduce the needle of the syringe into the subarachnoid space by passing it between the third and fourth lumbar vertebræ. The syringe should not be attached to the needle at this time, and between two and three drachms of the cerebro-spinal fluid should be allowed to escape. This fluid is known to be highly toxic in tetanus, much more so than is the blood serum. Then the syringe containing from 10 to 15 cubic centimetres of antitoxin should be attached to the needle and its contents slowly injected, allowing at least five minutes for the process. This should be followed by the injection with a fine needle of as much as possible of the antitoxin into the substance of, and along the course of, a large nerve trunk, preferably the one supplying the injured part. This method is based on observations concerning the paths by which the antitoxin reaches the spinal cord. After the operation and injections a subcutaneous saline infusion is desirable. The patient should then be placed in a quiet, darkened room and every possible means taken to avoid any disturbance which may excite the paroxysms. The administration of morphine, chloral, or bromides will be found advantageous. From the results already reported this mode of treating tetanus by antitoxin deserves a further trial, and doubtless the experience so obtained will be duly recorded.

THE DANGERS OF THE INDIAN RELIGIOUS FESTIVALS.

THE annual subsidence in the epidemic of plague has now begun to take place, the returns of plague mortality throughout India, though very serious, being for the time comparatively insignificant. But the yearly religious festivals, which cause an anxious time for the officials intrusted with the sanitary arrangements for these large concourses of people, have now commenced. Our Special Correspondent writes from Calcutta under the date July 16th as follows: "The extension of the railways in India has added to the difficulties. At Puri, for example, the numbers of the people attending the great car festival are increasing every year. In former times the pilgrims tramped by road but now they are conveyed by train in thousands packed like sheep in trucks. The water-supply is often deficient and polluted. Last year over 6000 deaths occurred from cholera and the outbreak in the town spread to the whole district around. The people are so ignorant and so fanatical that they prefer dying during the pilgrimage to availing themselves of medical assistance. Perhaps in the old days as many died on the road to or from Puri as now die in the city itself, but the danger which presents itself to-day consists in the widespread dissemination of the disease. The religious parties themselves have no concern for the health of the pilgrims and all the sanitary arrangements have to be made by the Government."

FRAUDULENT CLAIMS AGAINST THE EXECUTORS OF MEDICAL MEN.

A MAN named William Herbert Hilton was sentenced to nine months' hard labour at the recent quarter sessions held at Dorchester for an ingenious attempt to obtain money by false pretences from the executors of the late Dr. Sidney J. Allden of Bridport. Dr. Allden practised at Bridport in partnership with Mr. W. A. E. Hay until Dec. 31st, 1903, when the partnership was dissolved, and then alone until Feb. 28th, 1904, when he died. The usual notices of his death appeared in the medical papers, after which an account for goods to the value of £5 9s. was received addressed to him, which purported to be overdue. This would mean that the debt had been contracted by him privately during the existence of his partnership, and the fact that Dr. Allden had always been scrupulously careful in paying accounts as they fell due caused his executor, who happened to be a solicitor, to make careful examination of all his papers and receipts. A letter to Mr. Hilton, the pretended instrument-maker, who had as a telegraphic address upon his paper the suggestive, if curiously spelt, word "Chururgecos," produced an answer expressing regret at the news of Dr. Allden's death and referring to him as a fellow-student of the writer at St. Thomas's Hospital. This, no doubt, was due to the mention of St. Thomas's Hospital in the Medical Directory as a place where the deceased had received part of his medical education. As a matter of fact, however, he had only been there for six months when he was already fully qualified and therefore not a student. Inquiry showed that the prisoner had never been at St. Thomas's Hospital at all, that he had no place of business, that the addresses which he used were merely places where letters were addressed to him, and that he had not registered any telegraphic address. Upon these false pretences he was arrested and convicted, the matter being clinched by the fact that, although he defended himself with considerable pertinacity up to the last moment, he declined to enter the witness-box and give an account of himself. He would probably have cut a poor figure under the cross-examination which counsel for the prosecution was no doubt ready to administer to him. Juries are now fully aware of the right of prisoners to tell their stories under oath, and ingenious rascals who decline to face the ordeal are not likely to be believed. The story shows that the executors of professional men should be careful not to pay apparently genuine accounts without careful examination and also exemplifies the importance of keeping receipts for moneys paid, and also accounts of sums due. A noticeable feature in the trial of Hilton was the evidence of Mr. R. S. Hopkins, medical school attendant at St. Thomas's Hospital, who was able to swear positively not only that he had been unable to find the prisoner's name in the registers but that from his personal knowledge the prisoner had not been a student at the hospital within the period of Dr. Allden's attendance there or at all. No effort of the prisoner could shake him in this, and no doubt his claim to recognise the faces of all students who had attended during his service at the medical school was fully justified. The faculty of accurately remembering faces is natural to some persons and is one which can be strengthened by habitual effort. It is an extremely useful, if not essential, qualification of porters in hospitals, clubs, and other places to which admission is permitted only to members of the institution. Persons endowed with it can usually be depended upon not to make mistakes and their evidence is of an entirely different nature from that of those who readily, and often inaccurately, profess to know persons who, they allege, have upon some one occasion robbed or injured them. The case of the unfortunate man Beck, recently "pardoned" after having endured a term of penal servitude and a further arrest since for robbing women of their jewellery, will long be remembered as an instance of the ease with which mistakes may be made by casual and unpractised observers.

METRORRHAGIA IN TYPHOID FEVER.

THOUGH various hæmorrhages are common in typhoid fever uterine hæmorrhage has received little attention. Menorrhagia at the onset of the attack has been observed. In the *Journal of the American Medical Association* of July 2nd Dr. W. E. Darnall has recorded the following case, which is remarkable in that the hæmorrhage took place during the third week of the attack and did not occur at the time of a menstrual period. A woman, aged 30 years, became ill on May 21st with headache and muscular pains but she did not take to bed until June 9th. On the 12th the temperature was 103° F. and severe diarrhœa began. About 8 P.M. the temperature was 105° and metrorrhagia began. (Menstruation had occurred two weeks previously and had always been regular.) There were constant nausea and abdominal pain and the stools were of a "pea-soup" character. On the 13th there was no action of the bowels but the flow was more free and micturition was difficult. The Widal reaction was obtained. An examination did not reveal any disease of the pelvic organs. Ergot was given. The vagina was packed with gauze for 24 hours, which checked the hæmorrhage. On the 14th the temperature ranged between 101° and 103° and the pulse between 80 and 130. A few typical rose spots were seen. On the 15th the temperature ranged between 101° and 103° and the pulse between 114 and 143. The patient's condition was critical and the dejections took place involuntarily. The pulse was very weak and at times imperceptible. The stomach rejected everything. On the 16th death occurred. At the necropsy some Peyer's patches were found much inflamed and in two perforation had almost taken place. The uterus and appendages appeared to be normal and no cause for the hæmorrhage could be found. In its early stages the case was an example of ambulatory typhoid fever.

SECRETIN.

IT has been shown that the introduction of acid into the duodenum was productive of secretin even after destruction of all nerve connexions of the pancreas and alimentary canal with the central nervous system and even after extirpation of the sympathetic ganglia of the solar plexus. With a view to determine the mechanisms of this reflex secretion of the pancreas, as well as of the adaptation of the pancreatic secretion to variations in the food of the animal, Mr. W. M. Bayliss, F.R.S., and Dr. E. H. Starling, F.R.S., commenced an interesting research the results of which were communicated to the Royal Society in the Croonian Lecture this year. From a consideration of previous work on the subject these writers surmised that as the introduction of acid into the blood stream had no influence on the pancreas the acid introduced into the intestine must be changed in its passage to the blood-vessels through the epithelial cells or must produce in these cells some substance which on access to the blood stream evoked in the pancreas a secretion. This was found to be the case. On rubbing up the mucous membrane with acid and injecting the mixture into the blood stream a copious secretion of pancreatic juice was produced. It was then found that the active substance, which the writers call "secretin," was produced by the action of acid from a precursor in the mucous membrane, probably in the epithelial cells themselves. Once formed by the action of acid it could be boiled, neutralised, or made alkaline without undergoing destruction. The precursor of the substance (pro-secretin) cannot be extracted by any means that were tried from the mucous membrane. Even after coagulation of the mucous membrane by heat or alcohol secretin can still be extracted from the coagulated mass by the action of warm dilute acid. The writers are inclined to believe that the chemical mechanism described is the only method by which the pancreas is induced to secrete. Secretin can be split off from its precursor in the mucous membrane by the action of acids or boiling water. It is therefore concluded that the process is one of hydrolysis. Secretin is neither a coagulable proteid nor a ferment. It is soluble in 90 per cent. alcohol in the presence of ether but it is insoluble in absolute alcohol and ether. It is slightly diffusible through animal membranes. It can be filtered through a gelatinised Chamberland filter. It is not precipitated by tannic acid, thus excluding bodies of alkaloid nature as well as di-amido compounds. This evidence, slight though it is, points to secretin being a body of relatively small molecular weight and not a colloid. It may be compared to the active principle of the suprarenal glands, adrenalin, which has been obtained in a crystalline form and the chemical constitution of which has been approximately determined. This is, indeed, what would be expected of a substance which has to be turned out into the blood at repeated intervals in order to produce in some distant organ or organs a physiological response proportional to the dose. The discovery of secretin has placed in the hands of physiologists the power of controlling the activity of a gland by purely phy means and Mr. Bayliss and Dr. Starling have taken opportunity of the control thus acquired to investigate the exact character of the changes induced in the pancreas under this physiological stimulus. Apparently, secretin has no specific influence on any one constituent of the pancreatic juice. When injected it causes secretion of a juice which is normal in that it resembles the juice secreted on entry of food into the duodenum, and contains a precursor of trypsin, amylopsin, and steapsin. Secretin, in fact, appears to cause the pancreatic cells to turn out the whole of the mesostates which they have accumulated during rest in preparation for the act of secretion. If secretin be injected at repeated intervals until the gland will no longer respond to the injection it is found on microscopic examination that the cells have discharged the whole of their granules. Under healthy conditions it is probable that the activity of the pancreas is two-fold in character and that the normal stimulus of secretin excites not only a breaking down of the protoplasm and a discharge of granules but also a building up of the protoplasm and a new formation of granules. So marked, in fact, is this power of self-restitution that it is often advisable to diminish the resistance of the animal by bleeding or other means if it is desired to obtain a specimen of exhausted gland. So far the writers have dealt only with the correlation of the activities of the cells lining the intestinal tube with those forming the masses of the pancreas and liver, from which it will be seen that a very large part of this correlation is played by a chemical substance which acts, so to speak, as a chemical messenger between these various organs. A striking feature, however, of the pancreas is its alleged power of adapting its secretion to the nature of the food taken in by the animal. A study of the mechanism by which the pancreas can adapt itself to the nature of the food has been carried out and completed by Dr. F. A. Bainbridge in an interesting series of physiological experiments. It was found that as the result of injecting lactose some substance which may be called *x* is produced in the mucous membrane of the small intestine. This substance is carried by the blood to the pancreas and there slowly gives rise to the formation of lactase which is turned out in the juice when secretion is excited by the entry of acid chyme into the duodenum. As yet the nature of this substance *x* is not known. All that can be said is that it is destroyed at a boiling temperature, since boiled extracts of the mucous membrane of milk-fed dogs do not, when subcutaneously injected, cause the appearance of any lactase in the pancreatic juice of biscuit-fed dogs.

ALCOHOLISM IN SCHOOL CHILDREN.

OUR Berlin correspondent writes: "Dr. Goldfeld, medical officer to the public schools at Schöneberg, a suburb of Berlin, has recently carried out an investigation on the spread of alcoholism in school children. The investigation included a boys' school of 470 and a girls' school of 497 children (a total of 967 children), the result being that not less than 496, or 51·3 per cent., of the children were accustomed to indulge daily in the drinking of beer, whilst 299, or 30·9 per cent., casually took spirits also. The quantity of beer consumed was from one to two glasses of a quarter of a litre a day. Malt beer was preferred by the majority, whilst some drank lager beer, or the so-called white beer, a special Berlin beverage containing a great quantity of carbonic acid and a relatively small quantity of alcohol. As to the other liquors Dr. Goldfeld states that rum, kümmel, cognac, or even a combination of several spirits was taken. As a rule the father on going to a public-house invited his children to go with him, where he allowed them to have a drink. Children of publicans were especially liable to indulge in spirits. It was not only the boys but also the girls who liked to drink beer, but they preferred the sweeter liquors to the sharper ones. The teachers informed Dr. Goldfeld that children accustomed to the use of spirits were especially lazy, absent-minded, and inclined to tell lies. Dr. Goldfeld undertook to warn the children against the danger of alcoholism but without any success, the children continuing to drink. Although his endeavour was supported by the teachers the parents were not to be persuaded and the influence exerted by the school was checked by that of the parents. Dr. Goldfeld proposes that eventually addresses should be read on the subject before a meeting of parents of children attending individual schools and that, moreover, they should be provided on behalf of the school authorities with a short essay dealing with the dangers of alcoholism." The tables given in Dr. Goldfeld's paper show that of 470 boys 264, or 56·2 per cent., daily drank beer and 139, or 30 per cent., were casual drinkers. In one of the classes 96·2 per cent. were regular drinkers and in another only 33⅓ per cent. Spirits were taken by from 17·7 to 60·4 per cent. The figures relating to girls, though sufficiently serious, showed a less prevalent consumption of alcohol.

THE OPERATIVE TREATMENT OF RETROFLEXION OF THE UTERUS WITH ADHESIONS.

THE treatment of cases of retroflexion of the uterus with prolapse of the ovaries and adhesions preventing the reposition of the displaced organs is often a source of great trouble to the practitioner. The distress caused to the patient by such a condition is frequently extreme and yet ordinary methods of treatment may quite fail to give any relief. That most cases of retroflexion giving rise to symptoms where the uterus is moveable and can be replaced should be treated by the introduction of a pessary there can be no question. It cannot be justifiable in such cases to practise any operation if relief can be obtained by a pessary, unless indeed the patient refuses to wear such a support. In cases, however, where a pessary gives no relief and where the patient, as not infrequently happens, is made a chronic invalid by the conditions, the question of operative treatment must be considered, and it is precisely in this class of case that so much difference of opinion exists as to what operation should be performed. Shall the patient be treated by Alexander-Adam's operation, shall the round ligaments be shortened intraperitoneally, or shall the fundus uteri be fixed to the abdominal wall by one or other of the methods of ventrofixation? If adhesions are present then the view taken by most operators is that they can be dealt with most safely and most certainly after opening the abdomen. In such circumstances, then, either ventrofixation or intraperitoneal shortening of the round ligaments must be carried out. Which of these two operations is most likely to be followed by permanent results and lead to no subsequent disability? The question is one that does not admit of a ready answer. That ventrofixation has in some instances given rise to trouble in subsequent confinements there can be no question. But if the lower part of the uterus alone be fixed to the abdominal wall such fixation would not appear at all likely to cause subsequent trouble. On the other hand, the intraperitoneal method of shortening the round ligaments is quite safe from the point of view of any trouble being caused in a future pregnancy, but the permanency of the result is on the whole less certain. Our own feeling in the matter is that while intraperitoneal shortening of the round ligaments is not at all likely to be attended by any subsequent trouble, yet the permanent result of ventrofixation is much more certain. The method of practising it in which the lower uterine segment alone is fastened to the abdominal wall reduces the risk of any trouble at a subsequent pregnancy to so small a factor that this should be the operation of election in all cases of retroflexion of the uterus with adhesions where operative treatment becomes necessary. The problem is a much easier one in the case of patients who are not likely to have any more children either because they are past the menopause or from some other reason. Here the advantages of ventrofixation are not in any way counterbalanced by the risk of trouble in connexion with subsequent pregnancy or labour. For such patients the operation is especially indicated. Its dangers in these days of antiseptic surgery are so small that it may be recommended with confidence both as regards its risk and, if a good method be adopted, as regards the permanency of the cure of the displacement and the relief of the symptoms.

OVERCROWDING IN TRAINS.

WE have more than once referred in the columns of THE LANCET to the overcrowding of railway trains[1] and have pointed out that what is wanted is a combination among the passengers. Efforts are now being made to form this combination. We print in another column a short notice of an important meeting held in London on July 28th to protest against the attitude of certain railway companies towards their passengers and we hope that the movement thus inaugurated will not be allowed to drop. In order to show the urgency of this question of overcrowding on railways it may be interesting to recall to our readers' memory a few points made in a paper read at the Royal Statistical Society on March 15th, 1904, by Mr. E. J. Harper, statistical officer to the London County Council. Mr. Harper showed that during 1902 the local and other railways serving Greater London carried the enormous total of 600,000,000 passengers, the railways covered a little under 600 miles, and the London area was served by 531 stations. The lines which carried the greatest number of people per annum were the Metropolitan, which carried over 95,000,000, the District, nearly 49,000,000, the North London, over 50,000,000, the "Twopenny Tube," over 45,000,000, and the City and South London, nearly 20,000,000. From 3 to 10.30 in the morning the number of passengers brought into London from the suburbs was 410,471 and the greatest percentage of overcrowding on a single train was 72·1 per cent. This train carried a fraction over 17 persons in each ten-seated compartment. How it affects workmen may be inferred from a Parliamentary Blue-book issued in February of this year by which it appeared that the number of workmen's tickets issued on all railways within the metropolitan area in 1902 was nearly 62,000,000. There seems to be a general opinion abroad that when the lines of some of the chief offending railways are "electrified" overcrowding will disappear, but it must not be forgotten that although the managers of those railways will be granting increased facilities they have stated that they expect a large access of traffic, and how far that increase of traffic will counterbalance or outweigh the new facilities remains to be seen. It is possible that the general public may be too optimistic as to the good results which will arise from "electrification." At all events, the remarks of Lord Claud Hamilton, the chairman of the Great Eastern Railway Company, at the half-yearly meeting of the company held in January, 1904, give food for thought. He compared that railway with two specimens of the electric system—viz., the Central London and the Manhattan Railway of New York—and claimed that his railway was able to provide in the busiest period about twice as many seats as either of these two electric railways. The great difficulty of some of the railway companies appears to be that not all the platforms are long enough to allow of increasing the number of coaches per train. Some of the railway managers complain that the great cause of overcrowding is that the majority of people travel by the latest train that will convey them to their business in time and therefore rush up at the last moment. Sometimes, however, the railway companies "cut out" a certain train in the busy time when the passengers who usually travel by it have to travel by, and grossly overcrowd, the next train. Again, sometimes a train is delayed at a busy station and the barriers are not shut, with the consequence that passengers crowd into the already full carriages. These, however, are episodes on which no stress need be laid; what must be remedied is the regular and serious overcrowding of most of the trains running in and out of London at the busy times of the day.

THE DEVELOPMENT OF NERVE FIBRES.

SOME recent statements made by Dohrn and Bethe to the effect that ganglionic nerve cells play no part in the formation of nerve fibres have met with vigorous opposition from the veteran histologist Kölliker who in an article contributed to the *Anatomischer Anzeiger* strongly supports the doctrine long ago enunciated by himself and greatly strengthened by the observations of Ramon y Cajal. Whilst Dohrn and Bethe contend that nerve fibres develop independently of the cells from the fusion of ectodermic cells which subsequently constitute the so-called Schwann's cells, Professor Kölliker is perfectly convinced that all nerve fibres of vertebrata are *primarily processes of the protoplasm* of either peripheral or central nerve cells, in every case the nerve cells sending forth one process, and one only, whilst every nerve fibre terminates in a free extremity. He points out that the nerves of the spinal cord and medulla oblongata originate in the nerve cells and that subsequently the protoplasm of the process becomes differentiated into axis cylinder and medullary sheath. The axis cylinder afterwards becomes surrounded by small cells and terminates in the mode described by Cajal in ramifications which embrace other cells. The peripheral motor and sensory fibres become surrounded by special cells which form an investment to the ganglion cells and form also the sheaths of Schwann. All these cells proceed from the mesoderm and increase in number by mitosis.

RADIUM ENERGISED WOOL: RUSSIAN EXPERIMENTS.

IN a review by Mr. Elpe in the *Novoe Vremya* on the progress of recent inquiries into the properties of radium it is stated that Dr. E S. London of Russia has been studying the question of radium emanations and his investigations lead to the conclusion that generally radium emanations do not differ in their physiologo-pathological action from the action of radium itself. Both inflame the skin and are destructive to various kinds of life. Dr. London carried out a series of tests with widely differing subjects, such as paraffin, cork, paper, and cotton-wool, which were subjected for some time to radium emanations and produced inflammatory effects on the skin, the most intense radio-activity being observed in the case of the wool which because of its sponginess absorbs a large quantity of radium emanations. This inclines Dr. London, in respect of treating skin diseases with radium, to pay particular attention to this faculty of wool. "Emanated" wool, according to him, offers, in the first place, the facility of easy distribution over the body and it can be conveniently adjusted to any part according to the needs of the case. In the second place, in the vehicle of wool radium becomes conveniently portable and radio-active energy, as in charged wool, can be sent great distances, since in hermetically

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[1] THE LANCET, April 11th, 1903, p. 1049, and Feb. 13th, 1904, p. 430.

closed vess [illegible]
the same time radio-active wool may become part of pharmaceutical stock and at no great expense, for from five to ten milligrammes of radium are sufficient to energise a large quantity of wool. However, as to this Dr. London is careful to state that before making "emanated" wool an article of pharmaceutical commerce we must know how and in what particular cases the commodity would be useful—and that is still a question for the future.

TREATMENT OF PERTUSSIS BY VACCINATION WITH CALF-LYMPH.

WE have received from a correspondent the records of five cases of pertussis in which recovery ensued when the patients were vaccinated with calf lymph in the usual way as a protection against small-pox. The diagnosis in each case was undoubted and no other treatment was employed. The symptoms of pertussis abated when the vesicles matured and the cough had entirely gone in about 11 days. The suggestion that one pathogenic organism might destroy another has been occasionally raised, but so far as we are aware no definite proof of this antagonism has been brought forward. "Mixed infections" are not uncommon and in some cases the action of a pathogenic organism has been rendered more intense by the injection of a non-pathogenic microbe but we are not acquainted with any trustworthy investigations which tend to show that one germ can act as an antidote to another. Our correspondent is naturally much impressed with the result of vaccination in his cases but admits that the question still remains as to whether vaccinia virus is a specific in such cases or whether any form of absorption from a local infective centre would have a similar result. We agree with him that it would be interesting to ascertain whether other practitioners have had a similar experience.

DAKHYL *v.* LABOUCHERE.

IN this case a new trial has been ordered by the Court of Appeal and it is therefore again *sub judice.* In the circumstances it will be sufficient to explain briefly the reasons why it has to be re-heard and to await with interest the verdict of a second jury. The plaintiff, it will be remembered, was a person possessing foreign qualifications only and practising medicine in London, either chiefly or entirely in connexion with cases of deafness. He had been, but had ceased to be, medical adviser at the Drouet Institute when there appeared in Mr. Labouchere's paper an article criticising him adversely, the sting of the alleged libel lying in the term applied to him, "a quack of the rankest species," it being further stated that he had "left the Drouet gang in order to carry on a 'practice' of the same class on his own account." The principal misdirection of the jury by Lord Alverstone upon which the Court of Appeal based its order for a new trial consisted in directions which amounted to a finding by his lordship that the words used were libellous, instead of the question whether they were so or not being left to the jury. The question of "libel or no libel" is essentially one for the jury, the judge being limited to a decision if necessary as to whether the words complained of are *capable* of being a libel. The summing up of Lord Alverstone, however, was such that the jury might have inferred that to call a person possessing medical qualifications a "quack" was necessarily a libel upon him, whereas the Master of the Rolls pointed out, what indeed is obvious, that a man may be fully qualified to practise medicine and yet may be fitly called a "quack" should he resort to "quack" methods. The definition of a "quack," apparently accepted in this case as "a boastful obviously permits the term to be applied with justice to a person qualified by education and registration to practise medicine, if only because such an one may claim the power to remedy conditions which are irremediable. It was also held by the Court of Appeal that the learned Lord Chief Justice had not properly left to the jury the question whether the words used were or were not "fair comment upon a matter of public interest," because in summing up he had sought to distinguish between comment on the plaintiff and comment upon the Drouet Institute. The question whether the matter was of "public interest" was for the judge to decide but the question whether the criticism was "fair comment" was for the jury. Referring to the criticism of the plaintiff in his connexion with the Drouet Institute the Master of the Rolls said that if the writer "commented upon the methods of the person who worked the institution and said that the person was working a quack institution and was therefore himself a quack it would be for the jury to say whether the comment was fair comment or not." The Court of Appeal therefore ordered a new trial, the costs of which will include those of the first one and of the appeal, but, of course, this was done without any intimation or suggestion as to what, in the opinion of the Court, the result of such new trial should be.

IN the House of Commons on August 3rd Mr. T. Chamberlayne asked the Home Secretary whether he would consider the advisability of imposing some restrictions on the advertising of patent medicines with a view to protecting persons of the poorer classes. Mr. Akers-Douglas replied that the question of legislation for the purpose of dealing with certain evils in this connexion had been considered in his department, but he spoke as though he were much oppressed with the difficulty of doing anything.

Dr. Frederick John Hicks, who was charged at the Central Criminal Court with performing an illegal operation upon a young married woman, was found not guilty.

THE King has appointed Sir William MacGregor, K.C.M.G., C.B. (Governor of Lagos), to be Governor and Commander-in-Chief of the Island of Newfoundland and its Dependencies.

THE REPORT OF THE PRIVY COUNCIL UPON PHYSICAL DETERIORATION.

IN September last a Committee of the Privy Council was appointed by the Duke of Devonshire, at that time Lord President of the Council, to investigate the subject of physical deterioration as affecting the British population. The committee consisted of the following members: Mr. Almeric FitzRoy, C.V.O., clerk to the Privy Council; Colonel G. M. Fox, C.B., formerly head of the Army Gymnastic School; Mr. J. G. Legge, chief inspector of reformatory and industrial schools; Mr. H. M. Lindsell, C.B., assistant secretary to the Board of Education; Colonel G. T. Onslow, C.B., inspector of marine recruiting; and Dr. John Tatham of the General Register Office, Somerset House. The terms of the first reference were as follows: "To make a preliminary inquiry into the allegations concerning the deterioration of certain classes of the population as shown by the large percentage of rejections for physical causes of recruits for the army and by other evidence, especially the report of the Commission on Physical Instruction in Scotland; and to consider in what manner the medical profession can best be consulted on the subject with a view to the appointment of a Royal Commission and the terms of reference to such a commission if appointed." Shortly afterwards this reference being found unsatisfactory was enlarged and the committee was further instructed "(1) To determine with the aid of such counsel as the medical profession are able to give the steps that should be taken to furnish the Government and the nation at large with periodical data for an accurate comparative estimate of the health and physique of the people (2) to indicate generally the causes [illegible] ation as does exist in certain [illegible] ; the means by which it can m[illegible]

The committee has been commendably assiduous in the conduct of its inquiry for within a period of less than 11 months from the date of its appointment it has examined 68 witnesses carefully selected from each division of the kingdom and after the fullest deliberation, involving a lengthy correspondence it has unanimously agreed to its report which has been duly presented to Parliament. There are many competent persons who entertain the opinion that a matter of supreme public importance like the present, involving a critical examination of the state of the national health should have been referred not merely to a departmental committee but to a Royal Commission fully equipped with power to require the attendance of witnesses the production of documents, and so on, and with such other prerogatives as are conferred on commissions of that type. *But after careful study of the report before us* which has been prepared by a committee of seven members of the Civil Service, we think that the public will approve of the committee's conclusions although the body arriving at them may be destitute of the authority, independence and prestige which the King's mandate implies. Whether or not the recommendations are carried into effect by the Government or by the several minor authorities concerned We have no hesitation in saying that the committee has done most useful work.

For the convenience of our readers we may here briefly recapitulate the circumstances which led to the present investigation. In the *Contemporary Review* for January, 1903 Major General Sir Frederick Maurice published an article which, without disputing its interest and suggestiveness may be called sensational entitled The National Health a Soldier's Study. This article, which constituted a serious impeachment of the health of the British nation was based on the personal observations of Sir Frederick Maurice himself and of the then Inspector General of Recruiting with respect to the physical character of the youths who present themselves as recruits for the British army. The *fact relied on to justify this impeachment* was that according to recent experience, out of every five men offering themselves for enlistment only two are to be found in the army as effective soldiers by the end of two years service. Shortly after the appearance of this article the Director General of the Army Medical Department addressed a memorandum to the Secretary of State for War drawing attention to the writings of Sir Frederick Maurice and sharing with that officer responsibility for the statement that a very large proportion of the men who offer themselves for enlistment into the army are found to be physically unfit for military service. The intricacies of War Office administration have always been a sealed book to outsiders nor is it generally known to what extent the official chiefs of the various departments are expected to atone for the shortcomings of other branches of the service. But without prying into official secrets we have it on high authority that the method adopted by the Director General of the Army Medical Department is strictly in accordance with official precedent. In a letter published in THE LANCET of Feb 7th 1903, p 397 Surgeon Colonel F H Welch A M S, tells us that several years ago Sir Thomas Crawford late Director General of the Army Medical Department, finding that the material then available for recruiting had fallen lamentably short of the ideal published a paper based on army statistics in which he deduced conclusions practically identical with those for which we are indebted to Sir Frederick Maurice and the present Director General of the Army Medical Department. In a leading article in THE LANCET of Jan 31st, 1903, p 315, we ventured to challenge the validity of Sir Frederick Maurice's conclusions. We endeavoured to show that the health statistics of the class of men desiring to enlist in the army are by no means those of the general people but are rather the health statistics of that part of the population which the late Inspector General of Recruiting has described as "very largely rubbish."[1] If this be so it is unjust and absurd to disparage the health of the entire British nation on the strength of data relating exclusively to a comparatively small part of it.

On the issue as a Parliamentary paper of Sir William Taylor's memo [illegible] War the controvers [illegible] n of the masses rep [illegible] publication of that [illegible] has been flooded w [illegible] ation in physique of the labouring classes, while the usual crop of silly and impracticable suggestions has followed for the abatement of an evil the existence of which has been accepted without question. Early in July of last year the Earl of Meath drew attention to the subject in the House of Lords, basing his remarks on a statement in a report of the Inspector General of Recruiting for 1902 which once more affirmed the existence of deterioration among the classes furnishing army recruits. His lordship was followed by the Bishop of Ripon who, whilst personally sceptical as to the extent of the mischief alleged to exist advocated full inquiry into the matter. Upon this the Lord President of the Privy Council undertook to take the opinion of the Royal Colleges of Physicians of London and Surgeons of England on the entire subject and this we now know to have been in favour of further inquiry. On Sept 2nd the Duke of Devonshire announced the appointment of the committee which has recently made its report.

For convenience of comment upon the different matters of reference the committee has distributed the subject matter of its report under three headings. The first deals with the War Office memoranda, the second discusses the causes of such degeneracy as is known to exist together with the appropriate means for its amendment, and the third contains a summary of the principal recommendations of the committee. Under these headings severally, and in the same order, we propose to summarise the chief points in the committee's report. In pursuance of the scheme of procedure dictated by the terms of its reference the earliest evidence invited by the committee was that of Sir William Taylor, Director General of the Army Medical Service and that of the late Inspector-General of Recruiting, General Borrett. Major-General Sir Frederick Maurice also gave evidence on the same day. The reports and memoranda issued by the War Office on the responsibility of the first two officers above mentioned were naturally the first to engage the committee's attention. These documents having been formally submitted to the judgment of the two Royal Colleges the committee very properly prefaces its report with a statement of the [illegible] authorities which was [illegible] (1) that the evidence [illegible] memorandum is inadequate to prove that physical deterioration has affected the classes referred to, (2) that no sufficient material (statistical or other) is at present available to warrant any definite conclusions on the question of the physique of the people by comparison with data obtained in past times, and (3) that a partial investigation, as for instance, into the conditions of the classes from which recruits are at present mostly drawn, might be misleading and might give rise to erroneous conclusions on the general question. The Royal College of Physicians of London however differed from the sister College in Lincoln's Inn Fields by advocating an inquiry into the present physical condition of the people—an expedient which the latter authority did not think necessary. With regard to the War Office memorandum, the committee remarks that an independent examination of the Director General's papers undertaken by the authorities of the Metropolitan Police has led *to the conclusion* that the calling of a soldier has ceased to attract the class of men who formerly enlisted, and as a consequence a large proportion of the "residuum" of the population come under the notice of the army recruiting authorities. This conclusion appears to be borne out by the complaints of commanding officers as to the physique of many of those enlisted and tends to explain the drain from desertion among those who find themselves disappointed in the hopes of an easy existence. Again, Professor Cunningham of Edinburgh criticises the value of the War Office figures thus "Perhaps the most unreliable evidence," he says, "is that which is obtained from the recruiting statistics because the class from which the recruits are derived varies from time to time with the conditions of the labour market. When trade is good and employment plentiful it is only from the lowest stratum of the people that the army receives its supply of men; when, on the other hand, trade is bad a better class of recruit is available. Consequently the records of the recruiting department of the army do not deal with a homogeneous sample of the people taken from one distinct class." In one respect especially the data supplied by the War Office are unsatisfactory. On p. 2 of the Director-General's memorandum it is stated that three-fifths of the recruits examined come under Class I. of the Army official tables, which class consists of "labourers, servants, husbandmen, &c." On reference to the census returns we find that this description does not tally with any classification hitherto adopted for enumeration purposes; therefore, as the health and physical condition of street loafers, costermongers, and dock labourers differ widely from those of agricultural labourers, all of which workers are nevertheless included in this category, it follows that no useful analysis can be made of that very class of the population from which our army recruits are for the most part derived.

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[1] Report of Committee on Physical Deterioration par 25.

In the course of their evidence both the Director-General and the late Inspector-General of Recruiting were fain to admit, on being pressed, that the real lesson of the recruiting figures was the failure of the army, under present conditions, to attract a good type of recruit. Indeed, General Borrett gives up the case for widespread deterioration when he says: "It is a pity that the physique of the recruit-giving class is as poor as it is, so as to cause such a large percentage of rejections for the army." And again, when in answer to a question whether "the men who want to be soldiers" were not those people who have no opening in life or have no occupation, and who drift to the recruiter in the vague hope of being passed, he replies, "There are a great many of that kind, no doubt; I must confess that a great many are that way." Moreover, Sir William Taylor could not deny that, even if the number rejected by the recruiters was as large as some people suppose, it might merely imply that a great many not fit or disinclined for permanent work present themselves to the recruiting sergeant on the chance of being passed, and that the condition of those rejected is only representative of the state of the wastrels of the large towns who live by casual labour. As another and very excellent witness, Dr. A. Eichholz, observed: "It is the years after leaving school that determine so many lives; by the time the boy has reached 17 he has shown either self-improvement or self-deterioration, in which last case you may get him for a soldier. At 17," he goes on to say, "you are landed with the failures and the lack of self-improvement which they have exhibited is largely bound up with their physical condition. At 17 they become street loafers, practically the only available source of recruiting for the army." The committee quotes the following vivid description of these persons from Mr. Charles Booth: "These men hang about for the 'odd hour,' or work one day in the seven; they live on stimulants and tobacco, varied with bread and tea and salt fish. Their passion is gambling. Sections of them are hereditary casuals; a large portion of them drift from other trades; they have a constitutional hatred to regularity and forethought and a need for paltry excitement. They are late risers, sharp-witted talkers, and, above all, they have that agreeable tolerance for their own and each other's vices which seems characteristic of a purely leisure class, whether it lies at the top or bottom of society." The evidence of Sir Frederick Maurice did not modify the impression produced by that of either the Director-General or the late Inspector-General of Recruiting, nor could the committee accept the basis of the somewhat alarmist statement for which he is responsible—namely, that of those who wish to be soldiers only two out of five are to be found in the ranks at the end of two years. Sir Frederick Maurice obtains this result by taking the 34·6 per cent. of rejections by medical examiners and the 2·1 per cent. of those discharged before the completion of two years, and adding thereto a purely conjectural percentage as to the number of those previously rejected by the recruiters. It was stated by Sir William Taylor that no record whatever of these latter was preserved, but the committee thinks that if such a record could be maintained it might be useful to dispel false impressions as to the actual number. Looking, however, to the condition of the classes from which, as it has been seen, these people issue, the committee does not think that the proportion, even if it were as stated by Sir Frederick Maurice, is so very disquieting; indeed, a very competent medical witness, Dr. Eichholz, takes the view that having regard to the circumstances in which the British army is recruited the fact that 40 per cent. of those that present themselves to the recruiting officers become good soldiers is more to the credit of the physique of the people than the fact that under the German system of conscription only 16 per cent. of those liable to serve are rejected. From what has here been said we are by no means surprised to hear that, in the words of the report, the examination of the official representatives of the recruiting system has left upon the minds of the committee the conviction, confirmed as it has been by the evidence of other witnesses, that it would be as reasonable to argue from criminal statistics to the morals of the great mass of the people as it would be to argue to their physical condition from the feeble specimens which come under the notice of recruiting officers.

(To be continued.)

Looking Back.

FROM

THE LANCET, *SATURDAY*, AUGUST 5, 1826.

Electricity you are aware has been used in amaurosis, as well as in most other nervous affections. Mr. Hey, of Leeds, published some cases of amaurosis which he considered much benefited by the use of electricity; and the late Mr. Ware seems to have relied on it almost entirely. Indeed this influence in all the varieties of its application, and various other stimulants, have been tried over and over again in this affection; I have seen no benefit from it.

The tonic and stimulating plan of treatment has always been, and is still mentioned in the treatment of amaurosis. If I were to enumerate all the remedies of this class, which have been recommended and actually used, I should have to recount everything that comes under the head of tonic and stimulant, of nervous, antispasmodic, and antiparalytic. The greatest favourites, however, have been the arnica montana, pulsatilla, valerian, black hellebore, calamus aromaticus, camphor, opium, hyoscyamus, musk, castoreum, phosphorus, ammonia, flores zinci, steel, and naphtha; even fried millepedes have been strongly recommended.[1]

FOREIGN DEPARTMENT

MATERIA MEDICA.

M. Robinet on Mustard.—(Idem.)[2]

This distinguished chemist has discovered, that in pressing the mustard seed even in the cold, there can be obtained 20 per cent. of a fixed oil, having little smell and no vesicating power, while the residue deprived of this oil, becomes sharper and more blistering.

Hence the powder deprived of this oil would be much more active in cases where sinapisms are necessary.

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[1] Excerpt from Lecture on the Anatomy, Physiology, and Diseases of the Eye, delivered by Mr. Lawrence in the London Ophthalmic Infirmary, Moorfields.

[2] "Journal de Physiologie, par F. Magendie, bearing date April 1826, but only just published."

RUSSIAN PRECAUTIONS AGAINST CHOLERA.—The Medical Department of the Caucasus has, says the *Novoe Vremya*, ordered the disinfection of all letters and parcels coming from Persia. The Discount and Loan Bank of Persia (which is a branch of the Russian Imperial Bank) has fitted out three sanitary bacteriological sections to combat the spread of cholera from Persia into Russia. Each section consists of a medical man, a lady doctor, assistants, and sanitary officers, and they are furnished with travelling bacteriological laboratories and a stock of disinfectants and drugs. The Institute of Experimental Medicine organised these bodies which have left St. Petersburg for their work, the bank named bearing all expenses.

THE BRITISH MEDICAL ASSOCIATION.

MEETING AT OXFORD

THE meeting of the Association came to an end on Friday, when there was a general exodus from Oxford

On Wednesday evening a conversazione was given by the Vice Chancellor and the members of the University at the Museum It was very largely attended and a number of interesting demonstrations were given Prominent among these were the demonstrations by Mr C E Walker and by Dr W Ford Robertson on researches connected with cancer Dr W Ramsden also repeated his beautiful experiments upon bubbles and surface films which he showed at the Royal Society's conversazione on June 19th, 1903 The enjoyment of the evening was somewhat marred by torrents of rain which began to fall about 10 30 and there was a woeful scarcity of cabs The weather also affected the astronomical demonstrations which had been arranged in the Observatory for the only thing to be seen through the telescope was the spider web cross lines However, the sight of these seemed to afford great pleasure to a number of people

The annual dinner of the Association was held on July 28th in the hall of Christ Church The company numbered about 300 and the Very Rev the Dean of Christ Church (the Rev T B Strong, D D) was in the chair Amongst those present were the Vice Chancellor of the University (Dr D B Monro), the President of the British Medical Association (Dr W Collier), the Rector of Lincoln, the President of Magdalen, the Warden of Wadham, the Senior and Junior Proctors Sir John Moore, Dr T D Acland, and Sir W Macewen After the usual loyal toasts had been duly honoured the Warden of Wadham submitted ' The Imperial Forces, which was acknowledged by Surgeon General G J H Evatt, C B The toast of The British Medical Association was entrusted to the Rector of Lincoln He gained the sympathy of his audience by dwelling on the great progress that had taken place in the medical profession since the Association was started 72 years ago Mr Andrew Clark, chairman of the council of the Association in his response to this toast said the number of members had increased under the new constitution and laws Sir John Moore then proposed "The University and City of Oxford, and this was acknowledged by the Vice Chancellor and by the Mayor Sir W Macewen then submitted The President and the Executive of the Oxford Division of the Association, and the President of the Association in reply, stated how Sir John Burdon Sanderson had declined the honour of taking the office of President because of ill health He concluded by proposing the toast of "The Guests, ' to which Professor Osler replied The last toast of the evening was The Governing Body of Christ Church, given by Dr Acland and this having been suitably responded to by the Dean concluded the proceedings of the evening

The thirty fifth annual medical temperance breakfast given by the National Temperance League was held in the Town Hall Oxford, on July 28th Mr W McAdam Eccles presided over the gathering of 240 guests—the largest number that have ever been present Among those who supported him were Sir Victor Horsley, Sir John Moore, Dr J J Ridge, Dr T B Hyslop, Dr Robert Jones, Dr W Odell, Dr Heywood Smith, Surgeon General Evatt, C B , Colonel T H Hendley, C I E , Dr G E Shuttleworth, Dr T D Savill, Professor Murdoch Cameron, Mr R Henslowe Wellington, and Mr W Soltau Eccles The Chairman in a brief address remarked that the profession moved cautiously in the matter of alcohol but was earnestly alive to its important responsibility The public, he said, still needs informing that alcohol is not an absolute necessity for the human frame and medical practitioners must undertake their part in this work of tuition He strongly advocated some means of systematic instruction of medical students in the question of the use and abuse of alcohol Dr Collier said he was a strong supporter of moderation in the use of alcohol and wished to urge upon all members of the staffs of hospitals the utmost care in the prescription of alcohol, seeing that patients were so apt to take the exhibition of alcohol in the wards as an indication that they should continue to take it after discharge In his own wards at the Radcliffe Infirmary extremely little was given Dr T N Kelynack delivered an address on the Present Position of the British Medical Profession in Relation to Alcohol, reviewing the rise of the scientific study of alcoholism and the practice of the profession in the past as to its prescription in disease He then turned to the results of experiment and pointed out that the biologist had shown that the physical basis of life in both the animal and vegetable kingdoms may be detrimentally affected by alcohol As regards the present-day practice of the profession while it may rightly have been urged in the past that there was an unwarrantable laxness in the use of alcohol, every well informed practitioner is now fully alive to his responsibility in the matter He was sure that what was proved to be scientifically right cannot be ethically wrong A vote of thanks to the league was proposed by Dr Odell and responded to by Dr G Murray, the philologist of Oxford who had for long been a Vice President of the league A vote of thanks to the chairman was proposed by Dr Robert Jones of Claybury and Mr Eccles briefly responded

On Thursday evening, besides the annual dinner of the Association, a reception was given by Mrs Collier and the ladies of the reception committee, at which the members of the Association were entertained at a party in New College Gardens The weather was beautiful and the gardens were illuminated in the best possible taste with "fairy lamps" and Japanese lanterns The moon was full or nearly so and the gardens, bounded as they are by the old city walls, looked their very best The band of the Royal Marines played a selection of good music with their well known skill, and in the hall Mr A M Heathcote recited various dramatic sketches

At an earlier hour the same evening Dr G Bagot Ferguson gave a popular lecture in the schools on Disease Germs This is the first occasion upon which a popular lecture has been given under the auspices of the Association Mr Councillor Druce, chairman of the sanitary committee, was in the chair and after a few introductory remarks he called upon Dr Ferguson to give his lecture Dr Ferguson commenced by giving a short description of micro organisms and pointed out that not all were harmful but that some were of great value He referred to the enormous rapidity with which micro organisms multiply and concluded by some very practical remarks upon hygiene and hygienic methods The lecture was illustrated by lantern slides about 170 being shown

On Friday garden parties were arranged at Worcester College Gardens and Blenheim Palace, the invitations to the latter being sent out privately by the Duke of Marlborough Friday was a terribly wet day and the weather spoiled both functions In the evening the Mayor and Mayoress of Oxford gave a reception at the Town Hall, when upwards of a thousand guests were present. During the evening Dr. Arthur Haydon played the following violin solos: "Legende" (Wieniawski), "Berceuse" (Godard), and "Mazur" (Mlynarski). He gave an accurate rendering of them all, with good intonation, and was well received by the audience.

On the invitation of the mayor and corporation of Leamington Spa the members of the Association proceeded on July 30th to visit the Royal Pump Room and Baths at Leamington, where they were received by Alderman and Mrs. Flavel, the Mayor and Mayoress. The members of the reception committee, assisted by the members of the medical profession in Leamington, acted as guides to the visitors and much interest was taken in the parks and pleasure grounds and other objects of interest in the town. The Warnford Hospital was also thrown open for inspection. The visitors, numbering over 300, were provided with lunch, which was really a sumptuous banquet, at the Town Hall where the chair was taken by the Right Hon. A. Lyttelton, the Secretary of State for the Colonies and M.P. for Warwick and Leamington, who, in proposing the Royal toasts, referred to the great anxiety which prevailed in regard to the foreign relations of this country. Mr. Lyttelton also gave the toast of "The British Medical Association" and rendered a high tribute to the work that the medical profession was doing in tropical climates, instancing the remarkable reduction in malarious fever cases which had recently taken place at Suez. He had also quite lately received reports from the Gold Coast, Sierra Leone, and Lagos, which showed a tendency to the same good results in those places. Dr. Collier, in responding to the toast, gave some interesting details of the extent to which the British Medical Association had spread its organisation over the British Empire. After luncheon the guests repaired in conveyances to Warwick where they were shown over the castle and grounds and entertained to afternoon tea by the Countess of Warwick. A drenching rain somewhat marred the pleasure of the return drive to Leamington where an illuminated concert took place in the Jephson Gardens in the evening.

THE ADJOURNED GENERAL MEETING.

The adjourned general meeting was held on July 29th at the Reception Rooms in the Examination Hall, when Dr. W. COLLIER, the President, announced that an invitation had been received by the Council to hold the Annual Meeting next year at Leicester, which had been accepted. He then nominated amid applause Mr. G. C. Franklin, of Leicester, as President-elect.

THE SECTIONS.

MEDICINE.

WEDNESDAY, JULY 27TH.

Dr. DAVID NEWMAN (Glasgow) referred to a valuable series of 26 cases of

Renal Disease

in which the urinary signs were associated with pain in the kidney and in which nephrectomy had been performed, the capsule and the congested kidney being incised. In a large proportion both the pain and the albuminuria had been relieved, these symptoms having ultimately disappeared in 11 cases. It was important in such cases to decide whether one or both kidneys were the source of the albumin and tube casts by catheterising the ureters and by cystoscopic examination of the orifice of the ureters. He advocated venesection for uræmia and described a special method of his own for the relief of œdema by acupuncture.

Dr. W. RINGROSE GORE (Whitchurch, Salop) discussed the various causes of nephritis from the point of view of treatment.

Dr. SAMUEL WEST (London) read a paper on

A Disseminated Form of Croupous Pneumonia in Children, or primary broncho-pneumonia, in which he differentiated two forms of broncho-pneumonia as occurring in children. One of these varieties corresponded to the form usually described in text-books and the other was similar in its clinical course and temperature curve to the croupous pneumonia of adults but anatomically consisted of disseminated foci of hepatisation.

Dr. THOMAS MCCRAE (Baltimore) read a paper entitled

Acute Lymphatic Leukæmia, with the Report of Five Cases.

The features of the five cases were described. All were males. The ages varied from three to 21 years and the duration varied from 13 days to eight weeks. The average blood count showed hæmoglobin, 35 per cent.; red cells 1800; and leucocytes, 104,000 per cubic millimetre. In every case the lymphocytes were over 90 per cent. of the total leucocytes. An unusual point was that in three of the cases the prevailing type of white corpuscle was the small lymphocyte. The cases in literature were discussed and the very common severe anæmia was dwelt upon as suggesting that it might be better to consider that the changes in the red cells were as important as those in the leucocytes in acute lymphatic leukæmia. Considerable importance was to be attached to the changes in the bone marrow, especially in the cases without glandular enlargement, as helping to fix the seat of the essential changes in the disease. In regard to the etiology the condition suggested a severe toxæmia but the essential cause had yet to be found.

Mr. H. G. ARMSTRONG (Wellington College) read a paper on

Functional Albuminuria.

This symptom occurred in males of from 15 to 25 years of age. Two types of cases were met with—the florid subject with high tension, and the pale, flabby subject with low tension. A neurotic family history was usually present. The symptoms associated with functional albuminuria were apathy and disinclination for work, fainting attacks, and cardio-vascular instability. The symptoms were influenced by posture and readily disappeared on resting. As regarded treatment it was a mistake to prevent the patient from taking exercise; only long distance running and hard rowing should be prohibited. Tonics were indicated in the flabby anæmic cases. The prognosis was very favourable except where the mistake was made of putting the patient to bed on milk diet. A ready method of bedside testing of the urine with tablets of salicyl-sulphonic acid (one grain) was recommended.

THURSDAY, JULY 28TH.

The Treatment of Tuberculous Pleural Effusion and Pneumothorax.

Professor WILLIAM OSLER (Baltimore) opened a discussion on the above subject, remarking, in the first place, that there were three forms of pleural effusion—the pyogenic, the pneumonic, and the tuberculous. The large majority of cases were tuberculous. In the absence of pneumonia or of sepsis a case of pleural effusion was to be regarded with suspicion as tuberculous. He referred to a case of acute pleural effusion occurring in a girl, aged 14 years, who had aortic and mitral valvular disease, with fatal termination; the necropsy revealed a tuberculous pleurisy. Among 176 cases of pleural effusion 30 per cent. of those who could be traced two years after the attack had died from tuberculosis. As aids in diagnosis he considered the study of the exudate and of the sputum and the tuberculin test. In tuberculous effusions the cellular elements of the fluid belonged chiefly to the variety of lymphocytes, in contradistinction to the polynuclear granular cells found in effusions of septic origin. Out of 195 cases of pleural effusion without any definite history or sign of pulmonary tuberculosis in 30 cases tubercle bacilli had been found in the sputum. Certain clinical features pointing to a tuberculous effusion were an insidious onset, early thickening of the pleura, and early retraction of the affected side. For discussion three points were suggested: (1) the importance of early and repeated aspiration, used as the chief means of treatment and not merely as an adjunct; (2) the question whether drugs were of any use; and (3) the necessity of careful after-treatment, both local and general, in every case of tuberculous pleurisy. As regarded the first point it had been taught in the past that aspiration need not be performed until symptoms became urgent, one side of the chest was full, or a moderate-sized effusion had lasted without signs of diminution for several weeks. Professor Osler referred to a paper by Dr. Delafield of New York, published in the *American Journal of the Medical Sciences*, [illegible] removal [illegible] the form [illegible] thorax w[illegible] incision [illegible] est met) [illegible] iodide [illegible] were still employed by many, but he did [illegible] to bed the patient should begin by blowing water from one bottle to another. Deep breathing exercises should be continued for a long time after the attack of pleurisy and the open-air treatment suitable to all forms of tuberculosis should be carried out. Professor Osler demonstrated a useful breathing exercise which expanded the affected side of the chest to its full extent, the other side remaining practically rigid. The treatment of pneumothorax was not considered very hopeful, as 67 per cent. of 49 cases had died. Three groups of cases had to be considered: (1) the traumatic, the spontaneous, those following abscess or gangrene, and some tuberculous cases required no treatment at all; (2) some cases of acute pneumothorax with urgent symptoms demanded immediate operation, and a smaller number of cases *of suppurative pneumothorax required free opening of the* chest in order to convert a valvular into an open pneumothorax; and (3) a few of the cases of pyo- and sero-pneumothorax might be treated as West had urged, by radical operation as in empyema.

Dr. **G. A. GIBSON** (Edinburgh) said that there was room for discussion on the difficulty of diagnosing a tuberculous pleurisy from effusion due to other causes. Examination of the urine often aided the diagnosis in these cases. In many cases he had found the diplococcus of rheumatism in the urine *and he was of opinion that the urine* should be examined in all cases of pleurisy because serous pleural effusion of rheumatic origin often occurred. With regard to treatment, the value of repeated tapping was not to be overestimated and he had found tuberculin useful in some cases. Carefully graduated physical exercises should always be ordered after apparent cure of pleural effusion. In his experience when pneumothorax occurred suddenly, due to muscular or other strain, in subjects of robust health, recovery was usually complete.

Mr. **STANLEY BOYD** (London) said that operation was demanded always in acute cases. He suggested that when tapping became necessary more and more frequently in cases of chronic pneumothorax it might be advisable to drain the cavity slowly by means of fine cannulæ. The lung would thus have a chance of rest but he admitted there was a danger of setting up pyopneumothorax by such a mode of treatment. He described several cases of pyopneumothorax in which he had operated, removing large portions of the ribs; the results had not been encouraging, five out of six having died.

Dr. **SAMUEL WEST** (London) considered that the term "rheumatic pleurisy" as usually employed was misleading and should be limited to cases due to the diplococcus of rheumatism. He agreed as to the importance of aspiration. Pleural effusions rarely changed their character—serous remained serous, as a rule, but a serous might be converted into a purulent effusion by septic instruments. Aspiration was a dangerous operation as often performed; pneumothorax, cough, and respiratory embarrassment were a few of the complications of unduly rapid exhaustion by aspiration. Empyema, even of tuberculous origin, should be treated as were other forms of empyema, by incising the chest wall freely and washing out the cavity. The ribs should not be excised. If drainage by a tube appeared defective examination with a probe too frequently revealed the fact that the tube was not in correct position for drainage. Estlander's operation had usually a fatal termination and a modified Estlander's operation was useless. A pneumothorax should be tapped early and tapped as often as necessary; the ribs should be removed when repeated tapping failed to *give relief. He summed up the treatment briefly thus:* (1) if air alone was present and the symptoms were not urgent the case should be left alone to recover; and (2) if fluid formed it was necessary to find out whether rum or pus were present. If serum were found the air ould be absorbed and the case would run the course of an dinary serous effusion. If pus were found the prognosis of neglect in such cases was so grave that he recommended [illegible] ld be opened and freely washed out at once.

[illegible] **AN RAW** (Liverpool) briefly described 13 cases [illegible] othorax. Two had been treated by incision and [illegible] tubercle bacilli were found. Both had become septic and died. Of 11 others treated by aspiration two [illegible] *repeated aspiration. He considered that* [illegible] as were urgent cases of tuberculous pneumo- [illegible] be left alone. He did not agree with Dr. West as to the advisability of incision in tuberculous cases, as in his experience the wound was slow in closing [illegible] the question of [illegible] tuberculin as means of diagnosing tuberculous effusions. He considered free exposure to open air as valuable a method of treating tuberculous pleurisy as other tuberculous conditions. During the time a tuberculous pleural effusion existed raw meat was very valuable. He recommended early aspiration, if possible within the first 24 hours of discovering the presence of fluid. The fewer drugs administered the better. Potassium iodide, indeed, was injurious in many cases; diuretics were useless.

Dr. **T. D. ACLAND** (London) did not recommend early tapping for serous pleural effusion in children as he had seen it absorbed rapidly when left alone. He doubted the possibility of pleural adhesions forming as a consequence of *leaving a small amount of tuberculous fluid in the pleural* cavity. If the effusion was purulent the correct line of treatment was more difficult to decide; if the condition was confined to the pleura, forming a local tuberculous abscess, it should be dealt with; if it were part of a general tuberculosis it should be left alone. He had practised washing out the pleura but had found that on opening the chest wall pyogenic organisms entered and made matters worse. In hæmorrhagic effusions frequent tapping was the best method of treatment. As regarded the treatment of pyopneumothorax *he could not agree with Dr. West that the case should* be dealt with according to the ordinary surgical principles in presence of a pus-secreting cavity. Certain urgent cases demanded immediate operation but the majority should be left alone.

Dr. **J. BARR** (Liverpool) demonstrated his method of syphoning fluid from the chest, followed by the pumping in of sterilised air and a small quantity of adrenalin. This latter remedy, he believed, prevented further accumulation of fluid.

Dr. **J. E. SQUIRE** (London) endorsed the views of Dr. West. Pneumothorax rarely required urgent operation; the patient should be watched carefully for the first few hours after the onset of the pneumothorax; if he survived the first half to one hour he usually recovered.

Professor **OSLER**, in reply, urged the great benefit attending early aspiration in pleural effusion.

Dr. **RAW** read a paper on

Human and Bovine Tuberculosis

in which he summarised his communication at the British Medical Association meeting in 1903.[1] *He considered that* man was attacked by two varieties of the tubercle bacillus: (*a*) bovine tubercle, occurring especially in children fed on tuberculous cow's milk, attacking chiefly the serous membranes, bones, and glands, the disease in this case being chronic and less dangerous than (*b*) human tubercle, the usual form met with in adults, attacking especially the lungs, due to inhaled dry sputum or contagion, the disease in this case being more acute and dangerous. In cattle a general tuberculosis had been produced by inoculating them with tubercle *obtained from young children*, but when cattle were inoculated with adult tubercle they had remained healthy. It was probable that these types were antagonistic and that bovine tuberculosis in children protected them from adult human tuberculosis. He was at present engaged in taking the serum from tuberculous cattle with the intention of employing it for the cure of adult human tuberculosis.

Dr. **W. MITCHELL STEVENS** (Cardiff) read a paper on the

Clinical Features of Splenic Anæmia,

and described eight cases that had come under his observation.

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[1] THE LANCET, August 15th, 1903, p. 473.

Dr. H. LEWIS JONES (London) read a paper on the

Current Curves of Medical Induction Coils.

Oscillograph tracings were shown with the lantern and these demonstrated that the presence of an iron core had the effect of lengthening out the discharge waves. Long windings also had this effect but their influence was less than that of the iron core. Long impulses stimulated sensation painfully; short impulses acted well upon motor fibres and muscle. Short coils without iron acted almost painlessly upon muscle. As the iron core was necessary for the operation of coils, unless an independent mechanical break could be employed, Dr. Jones advised the use of a copper tube as a regulator when testing muscle, the copper tube to be interposed between the core and the secondary windings. Currents interrupted mechanically were likely to replace coil currents for accurate work. Dr. Jones showed a form of interrupter which he had used to the complete exclusion of coil currents for the testing of muscles during the past six months in the electrical department at St. Bartholomew's Hospital. It was superior to the coil because its currents could be measured, it was less disagreeable to the patients, and its curves of current were always alike. Tracings of the current of this instrument were shown.

Mr. HASTINGS GILFORD (Reading) exhibited a collection of photographs of cases of

Ateleiosis and Progeria,

and showed four living instances of ateleiosis. The word ateleiosis (not arriving at perfection) had been applied to a form of delayed development or infantilism, differing from other kinds of infantilism in having no obvious cause and in being of very pronounced type. There were two varieties: 1. The asexual variety in which the development of the sexual organs was more backward than that of any other part. A man, aged 30 years, was shown whose sexual organs were infantile; his facial appearance, height, weight, proportions, dentition, and ossification were childish. Growth was continuing at a very slow rate. His mind seemed to be that of a child who had undergone many years of experience. A second case of the same variety was exhibited, that of a boy, aged 14 years, whose development was like that which is usual at seven years of age. 2. An instance of the sexual variety of ateleiosis, a man, aged 38 years, was shown. His size, proportions, facial characters, and dentition were those of childhood, but in regard to his skeletal and generative organs he was a man. He was married to a woman of ordinary stature and was the father of seven children, of whom all were of ordinary size except one. This exception was a boy, aged 12 years, whose stature and skeletal and general development were equal to those which are usual at about half his age. This boy (who was also shown) seemed to serve as a connecting link between the two varieties of ateleiosis. Charles Stratton or Tom Thumb was a good instance of the sexual form of ateleiosis. The word progeria (*progeros*, prematurely old) was used for a disorder of the opposite nature to ateleiosis, those affected with it becoming senile with great rapidity. Enlarged photographs of two of these cases were shown. One of these patients died from angina pectoris at 18 years of age. The post-mortem examination showed advanced calcareous degeneration of the heart and aorta and other senile changes.

SURGERY.

THURSDAY, JULY 28TH.

Mr. J. BLAND-SUTTON (London) opened a discussion on

Hysterectomy.

He commenced by pointing out that while hysterectomy was only performed by the abdominal route the results were certainly bad but that they began to improve immediately the vaginal route was adopted. Even then, however, the remote results were unsatisfactory. He continued: "The principles on which the operation of hysterectomy should be based depend on the proclivities of the disease. Thus cancer of the cervix of the uterus mainly affects those who have been pregnant and tends to spread to the adjoining surfaces of the vagina and so to the bladder and rectum. Cancer of the body of the uterus, on the other hand, affects mainly elderly unmarried women and tends to spread to the broad ligaments and to the Fallopian tubes. Primary cancer of the Fallopian tubes was first described in 1888. The uterus may also have to be removed for fibroids. In some respects hysterectomy for fibroids surpasses in importance the operation of ovariotomy itself. The fibroids which are especially troublesome from hæmorrhage are the soft myxomata and some of these have been called sarcomata but I do not believe that fibromata ever become sarcomatous. There are four reasons why hysterectomy may be required for fibroids: (*a*) from long-continued hæmorrhage; (*b*) from gangrene of fibroids; (*c*) impaction of fibroids; and (*d*) because the fibroids threaten the patient's life during the puerperium. Enucleation of fibroids is practically impossible except in a few cases. In young married but sterile women it may be worth while to endeavour to remove uterine fibroids while leaving the uterus, but in only a few instances have the patients subsequently become mothers. In nine instances I have removed fibroids from a pregnant uterus and in only one case was the child not born alive. With regard to the exact mode of operation, those who advocate panhysterectomy say that the danger to the ureters is exaggerated but the danger to the ureters is *not* exaggerated, for in 152 cases in which the uterus and cervix had been removed for carcinoma the ureters were damaged in 19 cases. I consider that as a rule the supravaginal operation is the best for sterile women with a long cervix, but if the patient has borne children and is over 40 years of age, then panhysterectomy is to be preferred. One argument that has been used against the supravaginal operation is that the cervical stump is liable to become cancerous. This objection is well founded in a very few cases, but generally when the disease appears in the stump after supravaginal hysterectomy, it is because the disease is already affecting the cervix at the time of operation. Less than 20 years ago it was almost a routine practice to remove the ovaries and to leave the uterus in cases where there was much hæmorrhage from fibroids. I am sure that the reverse is the better course—namely, to remove the uterus and to leave the ovaries. The patient is very much better if she possesses her ovaries and even if only a portion of an ovary can be left it is an advantage. It is true that the benefit of leaving the ovaries is only temporary, for after hysterectomy they always atrophy, but the menopause thus produced is far better than the sudden menopause produced by double oöphorectomy. Another condition requiring hysterectomy is diffuse adenomyoma of the uterus which is very often mistaken for carcinoma. Acute septic endometritis has been treated by hysterectomy, but it can only very rarely be successful. Hysterectomy will also be required when the uterus has been involved in a tubal pregnancy. As to the "ethical" aspect of hysterectomy, some have doubted the justifiability of the operation, but it must not be forgotten that the uterus is merely a temporary organ, active for only 20 or 30 years, and that after it ceases to become capable of fulfilling its functions a woman may be perfectly well. Therefore if disease requires it there need be no hesitation in performing a hysterectomy on this account." Mr. Bland-Sutton did not describe the operation but distributed a pamphlet containing a description of his methods.

The discussion was continued by the reading of a paper by Mr. ALBAN H. G. DORAN (London). He described a case of Fibromyoma of the Mesentery weighing 30 pounds. After referring to the literature of the subject collected by Bégouin and Julliard Mr. Doran related the particulars of his own case. The patient was a woman, aged 34 years; she had noticed an abdominal swelling for about six months; it grew very large without causing any pain or symptoms of obstruction. It was soft and gave a sense of fluctuation. A diagnosis of ovarian tumour was made. On exposure at the operation it was found to be invested by the anterior or upper layer of the mesentery. It was enucleated with ease as there were no adhesions; nor was any resection of intestine necessary. The capsule was drained and the patient made a good recovery. Mr. Doran described the anatomy of the capsule in this and in similar cases and spoke of tumours encapsuled in other peritoneal folds besides the mesentery proper. A table was given containing clinical particulars of the case and of 12 other cases of the fibroma and myoma type encapsuled in the mesentery. In three of these cases the patient was a male; hence tumours of this class did not necessarily arise from elements associated with the female genital tracts. The question of diagnosis was discussed. As to treatment, if the growth was a fibromyoma removal by operation though dangerous was the right course. The precise relations of the tumours varied greatly and extensive resection of bowel was often needed, especially when there was a *relatively small tumour involving several* coils of intestine in its capsule All the 13 operations in the table were complete except one which ended fatally Possibly complications might be met with in future cases, as in operations for other types of mesenteric tumour Lastly, the treatment of shock after the removal of such large tumours and the management of the capsule were considered

In continuation of the discussion Mr C H J LOCKYER (London) read a paper on the Special Features and Modes of Treatment of True Cervical Fibroids, giving an account of two cases In the first of these the tumour was removed by myomectomy, it was a very large growth in a woman, 22 years of age The upper limit reached *to the umbilicus* but *owing to the fact that the* tumour had caused full dilatation of the os uteri its removal was not difficult The uterus involuted well and measured only two inches by the sound one month after the operation Two and a half years later the patient returned with a similar growth in the cervix and panhysterectomy was performed and the recovery from operation was complete Both tumours were true cervical fibroids and both were benign In the second case a true cervical fibroid was diagnosed by the corpus uteri being felt lying upon the tumour and not entering into its formation, and by the tumour fitting into the vagina like an egg in an eggcup, by the absence of vaginal cervix, and by the high anterior displacement of the external os The tumour and uterus were removed by abdominal panhysterectomy, and the patient recovered The uterus was very adherent to the bowel and it contained 12 other growths besides the large cervical fibroid Mr Lockyer drew a sharp distinction between the interstitial cervical fibroids which are invested by the wall of the cervix and so called cervical fibroids which grow out from the cervix into the parametrium *For true* cervical fibroids myomectomy was the operation *par excellence*, but the cases referred to were exceptions to this rule In the first case after myomectomy had been performed recurrence took place the simple nature of which was not discovered until after the second operation In the second case there had been clinical evidence of adhesions of the bowel to the body of the uterus and it was deemed wise therefore to operate by the abdomen

In the subsequent discussion the following took part Dr J A SHAW MACKENZIE (London), Mr E STANMORE BISHOP (Manchester), Professor MURDOCH CAMERON (Glasgow), Mr F BOWREMAN JESSETT (London), Mr C MARTIN (Birmingham) Mrs SCHARLIEB, M D (London), and Mrs BOYD, M D (London)

Mr R A BICKERSTETH (Liverpool) read a paper on Catheterisation of the Ureters

Mr A H TUBBY (London) read a paper on the

Operative Treatment of Muscle Grafting for Paralysis of the Serratus Magnus Muscle

He said that the deformity was sometimes bilateral but more often unilateral It arose from a variety of causes unnecessary to enumerate In the case quoted it was probably due to infantile paralysis The patient was a girl, seven years old, the left scapula stood out from the body On abducting the arm to the horizontal position *the scapula was nearer to the vertebral column than on the* sound side and the posterior border stood out so much from the chest that the fingers could be inserted beneath it so as to grasp at least the lower third of the bone When the left arm was put forward horizontally in front of the chest the posterior edge of the scapula receded from the thorax, causing a deep groove at this part Elevation of the arm above the shoulder was much weakened and there was considerable diminution in the reach of the left arm The external thoracic nerve and the muscle itself gave the reaction of degeneration It appeared to be hopeless to expect any improvement by the usual methods of massage and electricity, so Mr Tubby determined to try to transfer some power from a healthy muscle He decided to attempt to utilise a portion of the pectoralis major An incision was made over the anterior border of the axilla, a flap of skin and subcutaneous tissue was then turned down and a large part of the sternal portion of the pectoralis major was exposed, its attachment to the humerus was then freed and the muscular fibres of this portion were separated from the surrounding tissues for a considerable distance Then the serratus magnus was exposed and was found to be pale and atrophied The cut end of the pectoralis major was separated into several fasciculi and these were then stitched into the serratus magnus over an area corresponding to four or five digitations of the latter The wound healed well and six weeks later there was no perceptible difference in the prominence of the inferior angles of the two scapulæ Further, the child could abduct the extended arm well above the horizontal position and had acquired the power of thrusting the arm forward The improvement had been fully maintained up to the present time and there was no loss of power in bringing the arm across the chest, in spite of the diversion of part of the pectoralis major Although this was a single case the method deserved further trial

Dr HERBERT SNOW (London) read a paper on

Cancer Facts and Fallacies,

in which he advocated the formation by the British Medical Association of a cancer committee the duty of which should be to put on a scientific basis the numerous facts already known respecting the causes and phenomena of cancer It was essential that the cases of cancer should be properly classified, as at present the facts concerning various forms were all put together rendering valueless any conclusions that might be deduced from them

OBSTETRICS AND GYNÆCOLOGY

WEDNESDAY, JULY 27TH

The proceedings were opened by the President Dr F H CHAMPNEYS (London) cordially welcoming Professor Olshausen and Professor Schultze of Berlin to the meeting He then called upon Sir ARTHUR V MACAN (Dublin) to open a discussion upon the

Treatment of Accidental Hæmorrhage

In the course of a valuable and well thought out paper Sir *Arthur Macan reviewed the nature, causes and mechanisms* involved in the consideration of cases of accidental hæmorrhage He said that no satisfactory treatment had so far been devised for dealing with accidental hæmorrhage—that at any rate was the dictum of Holmes to whom he expressed his indebtedness for a paper previously published on the subject He considered that systematic plugging of the vagina was the best procedure He carefully reviewed the conditions of disease which gave rise to accidental hæmorrhage—e g scurvy hæmophilia nephritis and the like, and showed how these conditions lent themselves to defeat the forces of nature usually employed in order to arrest hæmorrhage He also discussed the mechanisms of labour which led to premature separation of the placenta as regards the uterus—e g, the contraction ring of Bandl the internal os the conditions of the uterine walls and the like, the condition as regards the placenta—unusual sites of insertion, short cord, and variations of intra uterine pressure, and stated that he did not believe that a healthy uterus could be over-*distended by blood clot He dealt with the subject under* five chief heads (1) causes of the hæmorrhage, (2) causes increasing the hæmorrhage (3) causes lessening the hæmor

ppear externally, and (5)

and he then discussed two

ure of the membranes and

(2) the result of uterine contraction The consideration of *the first led him to decide in* favour of plugging the vagina in preference to rupturing the membranes He considered that the tone of the uterus controlled the hæmorrhage and if the hæmorrhage was small and primary then it was in the centre of the placental site and gradually extended in concentric rings outwards and that the uterine contractions tended to diffuse the hæmorrhage and to cause it to spread Rupture of the membranes

and so increased the hæmo

commence to contract then

hæmorrhage In certain cases the contractions of the uterus actually increased the hæmorrhage Every hæmorrhage was originally internal and there were many degrees between the internal and the external The signs of hæmorrhage were pain, tension, and anæmia and external blood and clots The symptoms were out of all proportion to the amount of blood lost The diagnosis of combined internal and external hæmorrhage was most difficult With regard to treatment he considered prophylaxis was important as in hæmophilia, scurvy, nephritis, and the like The hæmorrhage should, if possible, be stopped without emptying the uterus, if this were not feasible then the uterus

Dr. H. LEWIS JONES (London) read a paper on the

Current Curves of Medical Induction Coils.

Oscillograph tracings were shown with the lantern and these demonstrated that the presence of an iron core had the effect of lengthening out the discharge waves. Long windings also had this effect but their influence was less than that of the iron core. Long impulses stimulated sensation painfully; short impulses acted well upon motor fibres and muscle. Short coils without iron acted almost painlessly upon muscle. As the iron core was necessary for the operation of coils, unless an independent mechanical break could be employed, Dr. Jones advised the use of a copper tube as a regulator when testing muscle, the copper tube to be interposed between the core and the secondary windings. Currents interrupted mechanically were likely to replace coil currents for accurate work. Dr. Jones showed a form of interrupter which he had used to the complete exclusion of coil currents for the testing of muscles during the past six months in the electrical department at St. Bartholomew's Hospital. It was superior to the coil because its currents could be measured, it was less disagreeable to the patients, and its curves of current were always alike. Tracings of the current of this instrument were shown.

Mr. HASTINGS GILFORD (Reading) exhibited a collection of photographs of cases of

Ateleiosis and Progeria,

and showed four living instances of ateleiosis. The word ateleiosis (not arriving at perfection) had been applied to a form of delayed development or infantilism, differing from other kinds of infantilism in having no obvious cause and in being of very pronounced type. There were two varieties: 1. The asexual variety in which the development of the sexual organs was more backward than that of any other part. A man, aged 30 years, was shown whose sexual organs were infantile; his facial appearance, height, weight, proportions, dentition, and ossification were childish. Growth was continuing at a very slow rate. His mind seemed to be that of a child who had undergone many years of experience. A second case of the same variety was exhibited, that of a boy, aged 14 years, whose development was like that which is usual at seven years of age. 2. An instance of the sexual variety of ateleiosis, a man, aged 38 years, was shown. His size, proportions, facial characters, and dentition were those of childhood, but in regard to his skeletal and generative organs he was a man. He was married to a woman of ordinary stature and was the father of seven children, of whom all were of ordinar
size except one. This exception was a boy, aged 12 year
whose stature and skeletal and general development we
equal to those which are usual at about half his a
This boy (who was also shown) seemed to serve as a conn
ing link between the two varieties of ateleiosis. Ch
Stratton or Tom Thumb was a good instance o
sexual form of ateleiosis. The word progeria (pr
prematurely old) was used for a disorder of the c
nature to ateleiosis, those affected with it becomir
with great rapidity. Enlarged photographs of twc
cases were shown. One of these patients died fr
pectoris at 18 years of age. The post-mortem e
showed advanced calcareous degeneration of th
aorta and other senile changes.

SURGERY.

THURSDAY, JULY 28TH.

Mr. J. BLAND-SUTTON (London) opened a discussion on

Hysterectomy.

He commenced by pointing out that while hysterectomy
was only performed by the abdominal route the results wer
certainly bad but that they began to improve immediatel
the vaginal route was adopted. Even then, however, th
remote results were unsatisfactory. He continued: "Th
principles on which the operation of hysterectomy should be based depend on the proclivities of the disease. Thus cancer of the cervix of the uterus mainly affects those who have been pregnant and tends to spread to the adjoining surfaces of the vagina and so to the bladder and rectum. Cancer of the body of the uterus, on the other hand, affects mainly elderly unmarried women and tends to spread to the broad ligaments and to the Fallopian tubes. Primary cancer of the Fallopian tubes was first described in 1888. The uterus may also have to be removed for fibroids. In some respects hystere
surpasses in importance the operation
The fibroids which are especially tror
rhage are the soft myxomata and s
called sarcomata but I do not bel
become sarcomatous. There are
ectomy may be required for fib
tinued hæmorrhage; (*b*) from
impaction of fibroids; and (*d*)
the patient's life during the
fibroids is practically impossib
young married but sterile wc
endeavour to remove uteri
uterus, but in only a fe
subsequently become mot
removed fibroids from a
case was the child not
exact mode of operati
ectomy say that the d
but the danger to
in 152 cases in wh
removed for carcin
cases. I consider t
is the best for ste
patient has borne
panhysterectomy
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[illegible] abdominal route afforded easier access to the diseased areas and permitted of a more orthodox anti cancerous operation than the vaginal route though, of course, there were many cases in which the vaginal operation advocated by Professor Olshausen was the most correct method, both from the surgeon s and patient s point of view

Dr F EDGE (Birmingham) said that it must often be a question as to whether, after the vaginal operation for the removal of the uterus all had been done that could be done for the patient but having heard the able advocacy of so distinguished an authority as Professor Olshausen he thought that the vaginal route for removal of preferable and only in certain other toneal adhesions, atresia, and so on operation be indicated

Dr MARY SCHARLIEB (London) entered a strong plea for a more favourable view of the abdominal route for the removal of the cancerous uterus especially in these days of improved technique in abdominal surgery There were cases —e g , nullipar e—where owing to a contracted and narrow vagina the vaginal operation was not easy or even possible then there were cases where adhesions from old peritonitis would be a source of danger

The PRESIDENT made some commendatory remarks on the paper and Professor OLSHAUSEN replied briefly to the remarks of the foregoing speakers, saying that there were of course certain circumstances in which the abdominal route would be desirable nevertheless the vaginal route was in his opinion and experience, the one most to be preferred

Dr ROBERT KENNEDY (Glasgow) read a paper entitled

The Treatment of Birth Paralysis of the Upper Extremity by Suture of the Fifth and Sixth Cervical Nerves

He dealt with the nature and causation of the lesion which he attributed to either partial rupture or complete rupture with cicatricial obstruction of the nerve He discussed at length the distribution of the paralysis as affecting the deltoid the spinati and so on He carefully considered the indications and time suitable for the operation and pointed out the necessity for moderately early operation as tending to more rapid recovery especially due to the fact that the muscles were more easily restored than if the operation were long delayed , on the other hand he pointed out that even in cases of long standing a great deal might be done He gave an interesting and instructive account of cases which he had operated upon and showed photographs of children whose full powers had been restored after operation He also carefully described the procedure of the operation necessary for excision of the injured portion of the nerves and their reunion He strongly deprecated the joining of the cut ends of the nerves to other than their

ns were done the result was

Dr Kennedy on his success and invited discussion

Dr HELME said that he had not seen any cases of Duchenne s paralysis and thought that certain unknown factors tended to its non observance He al o complimented Dr Kennedy on his results

Dr MUNRO KERR and Dr CAMPBELL congratulated Dr Kennedy on his results The latter said that he had during the last few years seen 20 cases at the children s hospital where he was surgeon and that he had successfully operated on many of them after the manner recommended by Dr Kennedy

THURSDAY, JULY 28TH

The proceedings were opened by the PRESIDENT calling upon Dr J SINGLETON DARLING (Lurgan) to read his paper entitled

Removal of Fibromyoma of the Left Ovary 22¼ Pounds in Weight

an account of a rapidly growing fibroid tumour containing some muscular tissue which had contracted adhesions in the peritoneal cavity, thereby rendering its removal somewhat tedious The presence of a well marked sulcus on its surface

some of his colleagues to be in

free and there was no ascites

mour of its kind on record in

Dr C L PURSLOW (Birmingham) said that it appeared to

rium fibroid as one of

[illegible] ligament fibroids

Dr J S FAIRBAIRN (London) pointed out that the specimen shown did not appear to be strictly ovarian as the ovary was not spread out o [illegible] usually the cas

) agree with

Dr

Dr EWEN J MACLEAN (Cardiff) agreed with Dr Purslow and Dr Fairbairn and said that the freedom of the uterus from adhesions to the tumour and elsewhere and, also the absence of ascites were noteworthy and interesting

The section on the motion put by the PRESIDENT, appointed Dr Purslow Dr Fairbairn, and Dr Maclean as a committee to consult with Dr Darling as to the exact nature

our and report to the meeting subsequently The

to the effect that there were not sufficiently exact

data available to enable them come to a definite conclusion

Dr F J MCCANN (London) next contributed a paper on

Two Cases of Urethro vaginal Fistula treated by Operation

The first case was highly interesting and instructive and was that of a primipara who had had a lingering first stage of labour with somewhat late application of forceps to a non descending head Subsequently she suffered from retention of urine The further history of the case was that ten days afterwards serious trouble with her bladder supervened and one month after her confinement she was put under the care of Dr McCann at the Samaritan Hospital, when it was found that the posterior wall of her bladder and urethra were in a sloughing condition and their subsequent separation laid the bladder urethra and vagina into one continuous cavity The patient was with great difficulty brought through the primary stages of her illness and gradually improved till the time when operation could be entertained for the remedy of the existing conditions Dr McCann described the difficult and ingenious operation undertaken for restoration of her bladder functions which was successful to a great extent, but he said that the bladder cavity now remaining was a contracted fibrous sac incapable of holding much urine which necessitated the constant use of a urinal He had found it difficult to obtain dilatation of this sac so far The second case was one where the base of the bladder and urethra was crushed by the delayed fœtal head He described the operation undertaken which was highly successful in every respect He further described an ingenious operation deduced from the foregoing cases and intended to remedy incontinence of urine supervening on over dilatation of the urethra from any cause

The PRESIDENT expressed great satisfaction at having heard Dr McCann s most interesting paper and suggested that in endeavours to dilate the contracted bladder the distensive pressure used should be very slight for he had noticed that in many cases some incontinence present was due to irritability and not so much to lack of space therefore gentle graduated pressure in these cases was more efficacious than the more forcible and abrupt applications It was also most interesting to note the success and efficacy of Dr McCann s attempts to repair the urethra

The three following papers presented material of uncommon pathological and practical scientific interest and were discussed together with evident appreciation by the entire section

Dr E SMALLWOOD SAVAGE S (Birmingham) paper was entitled

An Early Case of Chorion epithelioma following Hydatid Mole

This was a carefully worked out account, clinical and pathological of a case in which subsequently to the removal of a hydatid mole signs of malignant disease appeared The

The uterus was removed

nodule in the posterior wall

in the left cornu uteri An excellent series of enlarged photo micrographs illustrating the minute pathological histology were shown, as well as a complete series of lantern slides

The paper by Mr CHRISTOPHER MARTIN (Birmingham) on

A Case of Deciduoma Malignum

was of a s[illegible] cellent collection of m[illegible] logy of the condition [illegible] d and lucidly explained

The paper by Dr. T. WILSON (Birmingham) on

A Case of Chorion-epithelioma

was a clear account of a rapidly growing neoplasm of the uterus in a young woman extensively involving surrounding tissues and organs. The series of lantern slides exhibited were of especial interest. At the end of his paper he stated that Professor R. F. C. Leith of the University of Birmingham had written a pathological commentary on the three foregoing cases and asked the permission of the meeting to read the same. The commentary dealt with the possible mode of origin and growth of the disease and was an enlightening and instructive exposition of the behaviour and mode of invasion by the epithelium of the chorionic villi.

Dr. MACLEAN said that there was really a very small margin between simple hydatid mole and malignant hydatid mole from a microscopical standpoint. The microscopical distinctions should be clearly understood and carefully applied in order to prevent the removal of a uterus for a non-malignant mole and the retention of a uterus which was the seat of disease after malignant mole.

Dr. McCANN said that he agreed with Dr. Maclean that chorion tumours of the uterus were not all malignant. In many cases where syncytial masses were absent a high degree of malignancy was developed.

Professor BYERS next read a paper entitled

Suggestions for the Prevention of Puerperal Infection in Private Practice.

Attention was drawn to the progress in the general results of midwifery practice since the introduction of the antiseptic and aseptic methods. This was specially noted in the case of maternity hospitals. Professor Byers gave the statistics from two maternity hospitals—the Rotunda in Dublin and the Belfast Lying-in Hospital—showing that for the past two years out of a total of 8796 cases the total mortality was 0·31 per cent. and the mortality from sepsis was only 0·09 per cent. Turning to general practice he showed by the statistics given him by the Registrars-General of England, Scotland, and Ireland that the same good results were not procured. During the past 20 years 40 per cent. of the total childbed mortality was due to septic diseases. In England and Wales in 1901 2079 deaths in childbed were due to puerperal fever and 2315 were from other causes, accidents and so on. He thought that the difference in these results in maternity hospitals and in private practice must be explained as being due (1) to inefficient practical teaching and clinical training of students and midwives; (2) to the fact that the details of the antiseptic and aseptic methods as employed in maternities were not so carefully observed in private practice; and (3) to a tendency in some cases to meddlesome interference. Certain facts were then brought forward as to the nature of puerperal infection and suggestions were offered for its prevention. The dangers of vaginal examinations in labour were emphasised and the value of abdominal palpation was insisted on and it was urged that nature's action in labour should not be thwarted unnecessarily or supplanted by the methods of art. Nature should be followed and aided, and only when, for one reason or another, the resources of nature proved inefficient should the obstetrician interfere and then he should take the same precautions as the surgeon now did when he performed an operation.

After some remarks from the PRESIDENT, Dr. R. MOWBRAY (Castlederg), and Mr. W. G. NOBLE (London),

Dr. E. T. DAVIES (Liverpool) said that puerperal fever was invariably found in the practice of midwives and not in that of medical men, and trusted that in future owing to the better training of midwives matters would be improved. He cordially condemned the practice of repeated vaginal examination during labour.

Dr. H. CORBY (Cork) thought that undoubtedly repeated vaginal examination caused sepsis and that very often syringing was also the cause of infection. Phlegmasia dolens was, in his opinion, due to septic infection and it would usually be found that the sanitary arrangements of the domicile were out of order.

Dr. J. WARD COUSINS (Portsmouth) said that all obstetric cases should be treated as if they were surgical cases. He also thought that abdominal palpation was now much more used than formerly.

The PRESIDENT thought that those who had syringed their patients formerly should not be blamed, as they were really the pioneers and founders of modern practice and did the best they could in the past. It was therefore not correct to criticise them by the very standards which they had worked so hard to set up.

Dr. MUNRO KERR read a paper on

Cancer of the Cervix complicating Pregnancy, with Cases.

He carefully reviewed the existing practice in these cases and discussed the advantages and disadvantages of (1) panhysterectomy; (2) Cæsarean section followed by panhysterectomy; (3) Cæsarean section followed by vaginal hysterectomy; (4) Cæsarean section followed by vaginal amputation of the cervix; and (5) vaginal Cæsarean section. He quoted cases illustrating the successful performance of vaginal Cæsarean section.

Dr. WILSON discussed the paper and quoted a case where he performed vaginal Cæsarean section, then split and delivered the uterus per vaginam, removing it and clamping and tying the broad ligaments on either side.

The PRESIDENT regretted that lack of time prevented the full discussion of the preceding paper which was important and interesting.

Dr. MUNRO KERR replied, saying that Dr. Wilson's case was probably the most advanced case illustrating treatment on record.

STATE MEDICINE.

WEDNESDAY, JULY 27TH.

This section met under the presidency of Dr. J. S. HALDANE, F.R.S.

Mr. INNES GRIFFIN took the chair whilst the PRESIDENT read a paper on

Standards of Ventilation.

He said that it was a well-known fact that there was a high death-rate where there was overcrowding or, in other words, a deficiency of air for the number of persons. Much of this could be overcome by ventilation but there were other impurities which rendered the air unwholesome. The effects of vitiated air on health were well known and these he would not refer to, confining his remarks especially to dust, one of the most deleterious constituents. The great mortality among workers in dust-laden air from lung disease had been referred to by many writers and he would endeavour to show how this mortality might be reduced. The death-rate among miners from lung disease was much higher than in any other occupation, while, on the other hand, deaths from other causes were lower. This mortality began at the twenty-fifth year and was maintained at higher ages. The chief cause of the production of dust was the boring machine, an apparatus worked by compressed air, in which frequent and violent blows were given by the drill. When working in certain positions, horizontal or overhead, the drilling had to be done dry and large quantities of dust were created, but if the work was done downwards the hole could be filled with water and very little, if any, dust was created. The rock-drillers suffered most and though few in number in proportion to the number of workmen in a mine the mortality was very high, 74 per cent. dying from tubercle. Coal dust appeared to be less deleterious than rock dust, but in both the dust was cumulative and the damage done was irreparable. Lantern slides were shown of men at work with rock drills. Both in Cornwall and the Transvaal water was used for rock-drilling with most satisfactory results. Poisonous dust such as lead he would not refer to, nor to pollen dust, to which some unfortunate persons were susceptible and on which recent work had been done. There was little doubt that much harm was done by infective micro-organisms, but to what extent they were present in a crowded building it was doubtful, though probably in large quantities. Though ventilation could do much there were other means, more particularly preventive ones. In factories ventilation would not prevent the accumulation of dust and means must be found to avoid as far as possible its formation and dissemination. As regards infective material in rooms expectoration must be avoided as a constant source of risk. In the ventilation of rooms it had been generally assumed that an excess of carbon dioxide was a serious matter. The President did not believe that the amount unless very excessive made any difference at all. He had taken the air in a large number of schools and found it far above that usually stated in books to be positively dangerous, while the children did not suffer. As a matter of fact he had shown that an excess of carbon dioxide in the respired air had a stimulating effect on the respiratory centre and consequently was readily neutralised by increased respiratory effort, the amount of carbon dioxide in the alveolar air remaining constant The amount of aqueous vapour in air above or below normal made little difference Vitiated air had a nasty smell To what was this due? It was supposed to be an albuminous substance, a volatile poison, but in his experiments he could find nothing to warrant this theory The reducing power foul air had on potassium permanganate was due to dust He did not believe this foul air predisposed to phthisis, instancing schoolmasters and teachers, among whom the death rate for that disease was not high The effects of burning gas in a room were not very serious unless a large proportion of sulphur was present All the carbon disulphide should be removed from the gas before supplying it and he regretted to say that there appeared to be considerable laxity among some gas companies in this respect The actual number of germs present in the air was of little importance, as most were non pathogenic It was an established fact that speakers gave off micro organisms and breathers did not, and he believed that the high mortality among publicans from phthisis was due to the crowded, dusty air and loud talking persons who frequented public houses The two important factors in ventilation were warmth and movement and he believed the success of the open air treatment of phthisis was due more to the constant movement of air than to its purity The amount of carbon dioxide in air was still the best standard of the purity of air His own views did not quite agree with those of the Society of Medical Officers of Health which in his opinion had fixed its standard too low for ordinary working purposes

In the discussion which followed attention was called to the fact that the high death rate among older miners was due to the fact that they worked above ground where there were no precautions to prevent dust or to avoid dust explosions Factory owners had found the work better done under more hygienic conditions

Dr **THOMAS OLIVER** (Newcastle on Tyne) believed there was more phthisis in schoolmasters at the present time than formerly From his experience in a coal district he had observed that more dust was made by a hard coal and consequently more phthisis was developed He referred to the wonderful effects of wet drilling as compared with dry, hardly any dust being raised by the former, while in dry drilling it was sometimes impossible to see a person a few feet off

Dr A **HAY** suggested that the increased respirations produced by excessive carbon dioxide would lead to the inhalation of more dust and hence would be deleterious in this way

Dr C J **JONES** believed that the smell of a crowded room was due to clothes and dust, for it had no relation to the amount of carbon dioxide He had found that the smell began when the carbon dioxide amounted to 10 in 10,000 Schoolmasters he looked on as a selected class—selected for sound lungs, besides they were constantly under medical supervision

Dr W H **SYMONS** and Dr J H **HUNTER** also spoke and the **PRESIDENT** briefly replied

At the conclusion of this discussion a motion was passed to be sent to the council
papers should be printe
who wished to take part [illegible]
idea of what the reader of the paper was going to say

Dr **OLIVER** opened a discussion on

Caisson Disease

After describing a caisson and the methods of entering and leaving he said that the first fatal case of the disease occurred while the bridge at Saltash was being built by Brunel The man had been working at a depth of 87 5 feet at a pressure of + 40 pounds The first pathological account of the effects of compressed air was written by M Pol and M, Watelle, two French surgeons, in 1854 Since that time many others had appeared The chief points to be remembered were that with each increase of depth and pressure the men inside should work at a stretch a correspondingly shorter time and the air supplied should be pure and abundant In Newcastle at the present time a large number of men were being employed in caissons In the chamber 34 men could work 750 cubic feet of air per minute was pumped in or 1320 cubic feet per man per hour Up to 25 pounds per square inch the men worked ten and a half hours out of 12 From 25 to 30 pounds they worked from seven and a half to eight hours, and from 30 to 35 pounds about seven hours, above this the time was regulated by the ability of the men to stand the work The time allowed the men to pass through the locks was one minute for each five pounds' pressure Paul Bert was the first to experiment with compressed air on animals and he found an excess of nitrogen Hill and Macleod showed that there was an increase in the absorption of nitrogen but no alteration in the mean blood pressure or pulse rate while the animal was in the chamber When decompression was allowed bubbles of gas were seen in the blood Paul Bert drew attention to the dangers of oxygen at high tension, which acted as a protoplasmic poison causing convulsions and death Lorrain Smith had shown that it might also produce inflammation of the lungs and in this appears to act similarly to ether as a duct irritant The symptoms of the disease came on after the men left the caisson, but might be largely avoided if the men were kept in the lock one minute for each five pounds of pressure The men complained of pains in the limbs (called "bends), often of a very serious character Giddiness, epistaxis retention of urine, unconsciousness and delirium were seen Vomiting, with abdominal pain and analgesia of irregular distribution on the legs, sometimes occurred Physiologists said that the symptoms were due to the free gas liberated in the blood on the reduction of pressure, the gas being reabsorbed if the pressure was again raised To prevent the disease only healthy men should be selected for work short and thin men being more suitable than tall and stout ones Men about 25 years of age stood the work better than older one, and lengthened service conferred no immunity Shifts and the decompression should last in time in proportion to the pressure

Professor J **LORRAIN SMITH** (Belfast) referred to his laboratory experiments which showed the effervescence of the nitrogen on reduction of pressure, but he was not quite satisfied that this alone would account for all the symptoms How was it that age made a difference in liability? Was it due to a better collateral circulation? Could not the oxygen be accountable for some of the symptoms, for experiments tended to show that it had a serious effect on certain animals?

Dr E H **SNELL** (Coventry) detailed his experience at the Blackwall tunnel, in which the caisson was placed horizontally and not vertically, thus introducing many difficulties and requiring, when passing through gravelly soil, a very large quantity of air

Dr **OLIVER** replied

Dr G F **McCLEARY** (London) read a paper on the

Influence of Antenatal Conditions on Infant Mortality,

but owing to the lateness of the hour there was no discussion

Dr D E **ANDERSON** (Paris) handed in a remark to the chairman stating that he believed that excessive drinking of fluids during pregnancy led to venous congestion, excessive liquor amnii and consequent stretching of the umbilical cord

In the subsection of Forensic Medicine, presided over by Sir **THOMAS STEVENSON**, papers were read by Dr F **SMITH** on the Civil Responsibility of the Insane, by Dr H H **LITTLEJOHN** (Edinburgh) on Wounds of the Throat, with lantern demonstration, by *Dr F G* **WALDO** *(London)* on Notes on the Klosowski Antimony Case, by Mr R L **WILLCOX** (Warminster) on Infantile Mortality from Over lying, and by Dr **PARKINSON** on Rigor Mortis in Newly Born Infants from a Medico legal Point of View

THURSDAY, JULY 28TH

Dr G **NEWMAN** (London) opened the discussion on

Milk supply

He said the reason why a proper and efficient control of the milk supply was necessary was to prevent the conveyance of certain diseases, in which were included enteric fever, scarlet fever diphtheria, sore throats followed by illness and aberrant forms of disease, epidemic diarrhœa and tuberculosis After referring to these in brief detail Dr Newman said that the belief in this country was that tuberculosis could be conveyed by milk to human beings from cows, but that it probably followed when the udder was affected with that disease About 20 per cent of cows suffered from tuberculosis but in only 2 per cent was the udder diseased Taking the number of cows in this country as 80,000, yielding an average of 400 gallons per annum, as much as 32,000,000 gallons of milk were supplied open to grave suspicion and requiring careful watching. Over half the population of this country live [illegible] to them that the chief difficulties of [illegible] The problem was the time that was [illegible] milking of the cows and the supply to the consumer. There was practically no control. The sheds were dirty, the cows were dirty, the milkers were dirty, the methods of transport were inadequate, and on being delivered at the retail dealers no means were taken to keep the milk clean. Besides this the consumer often received the milk in dirty jugs and made no effort to keep the milk from dust or dirt. Railways made no special provisions for conveying milk, as was done in Denmark; indeed, the carrying of milk hardly paid the cost. The consumption of milk—such a necessary food for many—was far below in amount what it should be, the average working out at 39 gallons per person per annum, though among the poor this was really much lower, even as little as 1·7 ounces a day. The import trade in milk was increasing and unless the dairy farmers woke up would increase still more. The question of control was treated on broad principles and in Dr. Newman's opinion the demand for reform must come from the consumer. As soon as he let the supplier know that a pure milk of good quality was insisted on the dairy farmer would set to work to supply it. There must be coöperation between the milk vendor and the dairyman, and legislation, instead of hindering both vendor and dairyman, must tend to encourage the trade in milk. At the same time the present legislation must be enforced. The details for reform proposed were that the cows—a good breed being selected—should be kept clean, the animals should be regularly inspected by a veterinary surgeon, the water-supply should be good, and the cowsheds should be kept clean—in short, there should be perfect sanitation of the cowhouses. Sterilisation will not make a dirty milk clean. In addition to this there should be a systematic training in dairy work. Then, too, better railway conveyance was important and Dr. Newman showed how much neglected from a sanitary point of view the conveyance of milk was. At the present time milk-shops had to be licensed, but there was no power to refuse or take away a licence on the score of insanitary premises or neglect of proper precautions. To some extent the supply of dirty milk might be got over by selling it in bottles. Home contamination must be avoided by instruction and much might be done in this direction by visitors among the poor and school teaching. The question how much the selling of modified milk reduced the mortality from milk-borne diseases was next touched on and reference was made to various municipal milk-supplies and the institutions working on much the same lines on the continent.

In the discussion which followed Dr. HENRI DE ROTHSCHILD (Paris) emphasised the importance of the consumer demanding a pure supply; this had been done in France with the best results. Among the poor the question was one of price. He described the methods employed in Paris and said that their results had greatly improved since they began this work in 1897.

Dr. C. R. DRYSDALE (London) said he believed that many of the large firms selling milk in London conducted their business on the best and most sanitary principles. He believed the conveyance of tubercle by milk was very rare; enteric fever, everyone knew, was carried by it, but this arose from the use of infected water for washing the cans.

Dr. S. HALLOWS (London) said he had visited over 50 farms about London and in none had he found the condition satisfactory. The cowhouses were dirty, hung with cobwebs, contaminated by adjacent cesspools, while the milk-cans were dirty beyond conception. He considered inspection by proper officers most essential. The railway companies must be made to carry milk in proper vans and the cans must be sealed. He said it was not an uncommon thing for the porters to open the cans and help themselves to the milk by dipping dirty cups into the milk. The flower-sellers of the West had insisted on special trains and the milk-sellers should do the same. He considered instruction of the people of prime importance and condemned all condensed milks as insufficient in nourishing qualities.

Mr. T. LAFFAN (Cashel) said that many persons could not obtain milk in the winter but means should be taken to enable them to. He insisted on a fixed standard for milk.

Dr. G. F. MCCLEARY (London) thought that the reform should not have to come through the consumer but the supplier. The cow was the dirtiest animal on the face of the earth. What was required was cleanliness in production but this unfortunately led to increased cost.

Mr. STOKES, a local farmer, suggested that a conference should be held by the farmers, veterinary surgeons, and medical men. Farmers were quite ready to follow any reasonable suggestions and he believed that bottling the milk would prove a remedy for most of the evils.

Dr. NEWMAN briefly replied.

Dr. C. J. THOMAS (London) read a paper entitled

Experience of School Diphtheria in the Metropolis.

He had attempted to estimate the proportion of the total amount of diphtheria attributed to school influence, this being most amenable to control. [illegible] brought about by the whole [illegible] brought under one hygienic [illegible] diphtheria was a personal d[illegible] of investigation [illegible] on the importance of class inspection [illegible] attendance registers. The children who spread the disease might be divided into four classes: (1) slight unrecognised cases presenting no symptoms; (2) recrudescence of infection in cases after absence for notified diphtheria; (3) cases coming from infectious houses; and (4) those who carried the disease without having symptoms or demonstrable contact. The prevalence [illegible] population was discussed and [illegible] bacilli. Protracted infection was considered and its bearing on the practice of school closure. Closure was unscientific and unnecessary where proper facilities for bacteriological investigation existed. There was needed also education on the subject not only among the general public but also among the general practitioners and the medical officers of health were the persons to do this. Disinfection of houses without swabbing of "contacts" was pointed out.

Dr. E. DAVIS, Dr. R. JONES, and Dr. H. JONES joined in the discussion.

Dr. T. W. N. BARLOW (Bootle) read a paper on

The Teaching of Hygiene in Elementary Schools and the Desirability of excluding Young Infants from such Schools.

He referred to some causes of, and efforts made to counteract the causes of, infant mortality and the attitude taken by the education authorities with respect to the teaching of hygiene. He commented on the objections raised and related the scope of teaching adopted at Bootle. He believed it was undesirable to aggregate children at a susceptible age, for it was among those under five years that the greatest mortality occurred.

Dr. K. F. LUTOSLAWSKI (Warsaw) remarked on the absence of any information in text-books on personal hygiene.

Dr. J. MACGREGOR ROBERTSON (Glasgow) believed that successful instruction in hygiene was not practicable. Already the curriculum was too large and to add hygiene to it was to court failure. Instruction in physiology must go with hygiene and an hour a week, the most that would be given to the subject, was too short a time. To this must be added the great difficulties that there would be to demonstrate the value of hygiene.

Dr. JESSIE MACGREGOR (Edinburgh) agreed with the last speaker as regards physiology. Hygiene had been taught most successfully in Japan where instruction was given in physiology, while the teachers received more advanced instruction as well as being taught the care of sick children.

Dr. THOMAS said that expert medical advice was required at the Education Office and Dr. BARLOW thought the teaching of personal hygiene most important.

Dr. ELLIOTT SMITH read a paper on

The Spread of Ankylostomiasis.

It was proved now that infection took place through the skin, the larva working its way down the hair follicles and reaching the blood-vessels and lymphatics. By this means it reached the right side of the heart and pulmonary circulation. From the capillaries it passed into air vesicles and commencing here to grow crept up the bronchi to the trachea, larynx, and epiglottis, to the œsophagus and finally to the duodenum. Here it attached itself. It appeared to live on the epithelium and not to suck the blood, so that the anæmia it produced was probably caused by the formation of some toxic substance, this being possibly formed in two glands situated on the side of the mouth of the larva. The mud of the Nile swarmed with these larvæ and it was through the unbroken skin of the feet that the larvæ gained entrance.

The PRESIDENT said he had found the disease among the miners in Cornwall; these men suffered from anæmia. They also had a pustular eruption on the hands and he thought it might be spread by this eruption. He agreed with Dr. Smith that infection could take place through the unbroken skin.

PSYCHOLOGICAL MEDICINE.

WEDNESDAY, JULY 27TH.

The *presidential address by Dr.* CHARLES A. MERCIER (London) dealt with the subject of

Criminal Responsibility and Degeneracy.

[illegible] -cier, there had been a difference [illegible] the professions of law and [illegible] was largely due to difference of aim. Thus the legal mind approached the question of criminal responsibility mainly with the object of protecting the community from wrong-doers, while the medical mind was apt to regard primarily the individual offender and the justice or hardship of the punishment inflicted on him, and was inclined to strive for the mitigation of punishment. But neither the protection of the community from wrong-doers nor the protection of individual wrong-doers from excessive punishment was the ultimate aim in dealing with criminals. Both of these were subsidiary to the attainment of a still more desirable end—the strengthening of the sense of responsibility throughout the whole community. In the bad old days, before Sir Samuel Romilly, the general sense of responsibility was not strengthened by savage punishment but weakened. The standard of morality was not higher but lower when 20 felons, men and women, were hanged at Tyburn every Monday morning; when 200, 300, 500 condemned prisoners were lying in Newgate at the same time under commuted sentence of death waiting for the ship to take them to Botany Bay; when children were hanged for petty offences; when, on the one hand, an innocent man could be hanged on the evidence of Jonathan Wild, and on the other, no weight of damning evidence could secure a conviction if there was some trumpery verbal flaw in the drafting of the indictment. The most important elements in punishment were discrimination and certainty of infliction and, in the circumstances referred to above, these elements were not only lamentably defective but appeared to be deliberately minimised. It was important to cultivate and to increase the sense of responsibility in all citizens, but this aim was defeated by the spread of the doctrine of degeneration as advocated by certain writers. Dr. Mercier combated and, indeed, ridiculed the use of the term degeneracy as popularly used at present. "If by degeneracy is meant a peculiar diathesis or variety of man, distinguishable from other men by 'stigmata,' that is, by peculiarities of structure, or function, or habit, that are inborn, that are constant in individuals that are so stigmatised, that mark off the degenerate from the normal man, then de- [illegible] exist, [illegible] nicious [illegible] Dr. M- [illegible] against the system of the housing, education, and treatment of criminals carried out at Elmira Reformatory and regarded the methods adopted there as an example of waste, of luxury, and of misapplied philanthropy. The criminals educated and trained there were provided with luxuries by which the wicked man was to be turned away from his wickedness But these luxuries "did not grow spontaneously nor did they fall like manna *from heaven. They were provided for the use and delight* of the criminal by the thrift, the labour, the self-denial of law-abiding men. If criminals and scoundrels of every order were thus to be pampered, what was to be done for the [illegible] -st, law-abiding citizen who saw [illegible] -ill-rewarded toil and privation, [illegible] -ortitude, no resting-place for his [illegible] the workhouse—that workhouse which was scorned and derided by the occupants of these comfortable reformatories?" Granting all that the fanatics of criminal pampering claimed for their results—"even granting that a certain small proportion of scoundrels might by a course of Turkish baths and lectures on English literature, and the study of Plato, as carried out at Elmira, be weaned for a time at least from a career of crime—was the game worth the candle?" And was it worth spending thousands of pounds of public money in turning a few criminals into indifferent citizens? He thought it was not. Dr. Mercier then proceeded to discuss the question of the punishment and responsibility of criminals from a medico-legal standpoint; dealing with "the legal question" was the *animus nocendi* or *scelerandi* present, was the act wilful, that was done with knowledge of the act and of its obvious consequences and with intention to bring about those consequences, and, finally, was insanity when present an exonerating factor or not? He thought that insanity was not necessarily an exonerating factor. When the personality of the wrong-doer was so affected by disease, said Dr. Mercier, that not only his will but his desires were also insane, then the case became extremely difficult to decide as regards the degree of responsibility to be attached and he thought that a mitigated punishment most nearly satisfied the ends of justice.

Following upon the above paper a communication received from Sir Herbert Stephen was read.

Sir HERBERT STEPHEN (London) wrote that the question whether or not there existed a "criminal neurosis" was a question not of law but of medicine. He followed the opinions he had heard expressed by Dr. H. Maudsley and Dr. Mercier that such a condition did not exist and if, in his judgment, the existence of such a neurosis was proved or shown to be decidedly probable he should allow medical evidence to be given to that effect, but should advise juries that that was evidence tending to prove the accused person to be guilty. He further would regard the condition of "criminal neurosis" in convicted offenders as a reason for depriving them of their liberty (to commit crime) for as long a period as possible, for the essential point to be apprehended in the proper legal treatment of insane criminals was that some criminals who are insane should nevertheless be treated as criminals, though it might frequently happen that their insanity should be considered a reason for mitigating the severity of their punishment. An epileptic who, in the course of a fit or in the state of unconsciousness following a fit, killed some one, generally a friend or lover and often in the presence of others, had no memory of the act or in a minority of cases had only a faint and clouded memory like the memory of a dream. Such a case ought to be treated merely medically and should suffer no punishment but should be restrained as a precaution against a recurrence of the epileptic attack. When a woman, generally soon after childbirth, killed her newly born child (by drowning or otherwise) she knew that she was killing the child and meant to kill it and did so because being passionately fond of it she had an insane obsession of mind to the effect that death was highly desirable for the child. When the mental obsession had passed off the woman remembered what she did and deeply regretted having done it. He did not consider mere punishment suitable for such cases as these but thought there should be a considerable period of enforced seclusion and submission to some form of discipline, because although the patient's knowledge of her act and of its nature was entirely overcome for the moment by the violence of her mental obsession it was never entirely abolished or suspended as in the case of the epileptic. A third class of cases included those in which the insane affection of the mind was a more remote cause of the crime than in the two previous classes. Here the patient in consequence of his morbid mental affection conceived a violent hostility towards some person. He then, in gratification of his hostility, proceeded to murder his victim, showing premeditation, care, and resolution in effecting the deed, and skill in [illegible] that th- [illegible] wrong, [illegible] be puni- [illegible] and the [illegible] himself to have suffered should not be counted in the least in exoneration of the immorality or the illegality of his act. Insane criminals belonging to this class ought to be punished. In some cases, though not very many, he thought the full penalty for the offence should follow the conviction exactly as if the offender were perfectly sane. In others where the extent of morbid delusion and insane behaviour appeared to be comparatively great he thought that the punishment should be mitigated. He included in this latter class the cases where mental disorder amounting to insanity was the original cause of criminal indulgence of the sexual passion, whether the resulting crime was murder or rape.

Mr. A. Douglas Cowburn (London) submitted that "wrong-doer" was too vague and indefinite, that distinction should be drawn between crimes, torts, breaches of contract, and mere moral obliquity. Crime on the one hand was an act or omission punished by society as a wrong against itself. Tort on the other was a wrong inflicted by a man on his fellow, not regarded as a wrong done to the State but as giving rise to a civil action for damages. This distinction was important. Assuming that by "wrong-doer" was meant a convicted criminal he objected to and repudiated the proposition that insanity did not of itself necessarily exonerate him from punishment. He thought that it should. Dr. Mercier had expressed his satisfaction with the answers of the judges in 1843. That was not the opinion of Lord Brampton and Lord Coleridge. Those answers had been repudiated by many States of America, by Italy, and even by Russia. He submitted that the only real, true test was that laid down by the State of New York, "No act done by a person in a state of insanity can be punished as an offence," and applied by the State of New Hampshire in the case of the State *v.* Jones (50 New Hampshire, 1892, p. 369, *et seq.*). This simply left to the jury as matters of fact whether the accused committed the crime in question and whether at the time he was suffering from any disease of the mind and left it there. The difference between mental health and mental disease was a scientific fact entirely within the purview of medicine and with the particular forms of insanity and its essential characteristics the law, as such, should have nothing to do. *Per contra*, responsibility (by which was meant liability to punishment) was a matter purely for the law, and if the law as voiced by the jury under the guidance of the judge did not determine who were to be punished it determined nothing. Juries did not understand difficult psychological matters or elaborate legal criteria and they probably paid no attention to either. They were simple men, perhaps, but very conscientious; they convicted if they thought that the act was committed by an ordinary criminal and they acquitted if they thought the agent was insane. He submitted that if the law of England would follow the American example and would hold that no man should be held criminally accountable for an act which was the offspring of mental disease it would be more in accordance with the dictates of common sense and humanity and would be more likely to solve the difficulties which arise at present. If it was objected that this amounted to no definition at all, that it was too vague, too indefinite, to be accepted he would submit that it was far better in a region where there were so much difficulty and uncertainty that the law should not define at all rather than make a bad definition which, while contrary to its purpose, would be perpetuated by its authority. *Omnis definitio in jure periculosa* was especially true of this subject. They wanted, not "definitions" of insanity nor "criteria" of responsibility, but recognition of the only humane principle, that no man should be criminally accountable for an act which was the offspring of mental disease.

Dr. T. Claye Shaw (London) said that there were many degenerate people who were more liable and prone to commit crimes than others. He traversed the statement that insanity did not exonerate the wrong-doer from punishment or that the *animus nocendi* settled the question between the lunatic and the criminal as regards responsibility.

Mr. H. Havelock Ellis (London) said (in a written communication which he forwarded) that his standpoint was substantially the same as that of Aschaffenburg in his recent book, "Das Verbrechen und seine Bekämpfung." From the strictly medical point of view we were not entitled to use the word "responsibility." Responsibility was not a medical conception; it was a legal and metaphysical conception. It was the lawyer's business to determine responsibility as nearly as he could in accordance with the facts ascertained by the medical man. It was on this basis alone that the existing confusion could be brought to an end.

Dr. G. H. Savage (London) pointed out that degeneracy might and did produce deviations of a character opposite to one another, differing widely from the healthy or normal standard; thus dwarfism and gigantism were both manifestations of degeneracy. Though some delinquents were more mad than bad and others more bad than mad, and delinquents ought to be punished, yet if guided by legal principle they must be, if insane, not punishable. He did not agree with all that Sir Herbert Stephen had said as to the third class of persons who, though insane, yet knew the quality of their acts and so should be punished.

Dr. David Yellowlees (Glasgow) said that it was impossible to draw a sharp line between sanity and insanity; that humanity stood on a great slope, on the top of which were sane, reasonable, stable, self-guiding persons; at the bottom were the idiots and the chronic dements; and in the intermediate regions of the slope were the subjects of mental and moral defect and disorder of varying degrees. Whatever the law might say these persons on the slope must be dealt with specially since they were not like normal men and when they committed crime they should be judged more leniently and punished less severely if at all, "according to their position on the slope" of mental development.

Dr. G. Fielding Blandford (London) said that degeneracy was often due to environment and young children of degenerate and criminal character might, by living and being brought up in better surroundings, become well-behaved citizens. In the case of partial or less severe forms of insanity a mitigated responsibility should be attached to criminal deeds committed by the patient.

Mr. Conolly Norman (Dublin) said that it seemed to him there was a tendency to "obsession" both on the part of the physicians and the lawyers, one side of the house being oppressed with the fear lest those of unsound mind might be unjustly and cruelly punished, the other lest wicked criminals should escape their deserts through the machinations of foolish medical men. As to the question of responsibility in court he held that that was not a question for the physician and pointed out that Griesinger long ago laid down the maxim and acted upon it when called upon for his opinion on this point.

Dr. Ernest W. White (Dartford) said that most physicians were agreed that insanity should exonerate a criminal from penal servitude but not from going to a criminal lunatic asylum where he would be subject to moral discipline and surroundings not congenial to his nature and to a deprivation of freedom nearly allied to punishment. Probably nearly all the insane other than dements and aments (idiots) had some knowledge of right and wrong and could be controlled accordingly. There were degrees of responsibility in connexion with the insane which ought to have due consideration. He recognised that the graduated slope described by Dr. Yellowlees did exist and not a precipice dividing mankind into the sane and the insane and that while sanity reigned at the summit of the slope insanity lay at its base and on its sides.

Dr. Robert Jones (Claybury) said that the evolution of human thought and conduct in regard to punishment of wrong-doers showed stages of development: first, the primitive legal aspect of retribution in kind—an eye for an eye, a tooth for a tooth. With the progress of human society and the growth of sympathy and of altruism consideration for the individual arose and the protection of society was combined with thoughts for the disciplinary and temporary nature of punishment to be meted out to offenders. Though the sane mind was constituted after a plan or pattern which was approximated by the insane mind there were states of mind in which, owing to the predominance of delusions, the insane criminal could not judge of the nature of his actions and was not influenced by motives which were adequate to influence normal minds. Just as there were grades and varieties of colour-blindness or of deafness, so, he maintained, were there degrees of impairment of thought and reason, varying from slight abnormality to complete dementia, so that responsibility was attenuated and punishment should be mitigated. Insanity exonerated the patient from punishment in accordance with the degree and character of the mental alienation or disorder occurring at the time and he certainly dissented from the conclusion of the President that insanity does not necessarily exonerate from punishment.

Dr. G. E. Shuttleworth (Richmond) said that idiots occasionally committed murders or crimes of the most senseless and stupid character. He believed that congenital moral imbeciles were born into the world, children whom the older theology would regard as endowed with a "double dose of original sin." Punishment was probably thrown away upon them but there were other children whose moral defects were less marked and who were more capable of being influenced by environment and by appropriate punishment.

Dr. Mercier then briefly replied.

Lantern Demonstration on General Paralysis.

Dr. David Orr (Prestwich) and Dr. R. G. Rows

(Whittingham) gave a lantern demonstration with slides showing photo micrographs of the Degenerative Lesions occurring in the Posterior Columns and Roots of the Spinal Cord in General Paralysis, with remarks on the point of origin of the lesions in tabes dorsalis It was pointed out that the distribution of the lesion in its earlier stages and the anatomical changes in the nerves as revealed by Marchi s method supported the theory that the posterior nerve roots were particularly vulnerable at and near their point of entry into the spinal cord and that a [illegible] blood was the probable [illegible] question But why one set [illegible] the posterior roots should [illegible] the rest underwent degeneration was a problem that still awaited solution This brought the day s proceedings to a close

PHYSIOLOGY

WEDNESDAY, JULY 27TH

A paper by Dr A P BEDDARD (London) and Dr E I SPRIGGS (London) on

Some Points in the Metabolism of Diabetes with Reference to Present day Treatment

was read by Dr Spriggs and showed that the sudden withdrawal of carbohydrates from the diet of a diabetic patient was wont to be followed by symptoms of nausea, vomiting, weakness, loss of weight, and the odour of acetone in the breath, and that the metabolic changes as determined by daily estimation of the nitrogen ammonia sugar acidity, and oxybuty [illegible] is those of c[illegible] n deprivation [illegible] The most prominent change in the urine was a rapid rise in the proportion of nitrogen secreted as ammonia —e g, in one case from 7 to 29 per cent The blood also became less alkaline and contained less carbon dioxide The noxious material which gave rise to these symptoms of acid poisoning could hardly be derived from carbohydrates since the removal of carbohydrates was followed by its increase Administration of large doses of sodium bicarbonate caused a general improvement in the condition of the patient, disappearance of the smell of acetone in the breath, and diminution of the ferric chloride reaction of the urine, although there was no marked change in the amount of sugar excreted in the urine The ferric chloride reaction and the weight of the patient supplied much more trustworthy evidence of his condition than the amount of sugar in the urine It was advisable when carbohydrates were removed from the diet of a diabetic patient to give large doses of bicarbonate of sodium until the urine became neutral but it was necessary to watch for possible disturbances of digestion and œdema produced by the alkali

Dr W LEONARD BRADDON (Seremban, Malay Peninsula) read a paper on

A New Method of Staining Red Blood Corpuscles

By using a solution containing ½ per cent of ordinary methylene blue and 1 per cent of potassium citrate structures which he had called "mycoid bodies" could frequently be demonstrated inside red blood corpuscles It was, however essential that the blood should not have been previously dried as in the ordinary method of staining blood films The appearance of these bodies suggested that they were living organisms such as myxomycetes, but they might conceivably be nothing more than coagula They occurred in small numbers of corpuscles in most apparently healthy animals but they were never present in large number except in illness

A paper by Dr F GRIFFITH (Liverpool) and Dr W B WARRINGTON (Liverpool) on

The Varieties of the Cells of the Spinal Ganglia and their Relationship to Axons of Different Distribution

showed that Nissl s method had in the hands of Lugaro shown five different types of cells in the spinal ganglia Dr Griffith and Dr Warrington had by section of various nerves attempted to ascertain the peripheral connexion of these different nerve cells After removal of the stellate ganglion they observed changes in cells of Lugaro s "dark obscure type in the first five thoracic spinal ganglia, these cells having a diameter of 30μ to 40μ The axons divided were probably afferent nerves from the heart and lungs and it was interesting to note that since the afferent fibres of the splanchnic nerves arose from regions as high up as the fourth thoracic segment the same segment of the cord supplied both abdominal and thoracic viscera, and thus the observed overlapping of sensory areas of referred pain in diseases of the stomach and of the lungs could be accounted for After section of the "hamstring nerve' chromatolysis was detected in the sixth, seventh, and eighth thoracic spinal ganglia, the changes occurring principally in the largest cells (over 80μ) but also in smaller cells down to 30μ The nerves to the muscle spindles appeared therefore to arise from the largest cells—those of Lugaro s ' large clear type After section of the internal saphenous nerve there was chromatolysis in cells 28μ—71 5μ in diameter found in the sixth lumbar spinal ganglion, most of them belonging to the obscure type ' Coarsely granular cells and cells of the smallest type, less than 30μ across, never showed chromatolysis Donaldson's enumeration of nerve cells of spinal ganglia pointed to the latter as immature cells not yet possessed of an axon

Dr ROBERT KENNEDY (Glasgow) read a paper on

The Histological Changes occurring in Ununited Divided Nerves

The changes in the peripheral portion of a nerve severed from its central connexions consisted of (1) pigmentation and eventual complete absorption of the old axis cylinders and their myelin sheaths, leucocytes and connective tissue cells invading the nerve, and (2) almost simultaneously with the beginning of the former process proliferation of the cells situated between the sheath of Schwann and the medullary sheath Study of the later changes occurring in the peripheral segment left no doubt that the chief function of the proliferation of the neurilemma cells was a regenerative one and that the cells in question gave rise to new nerve fibres This regeneration progressed only up to a certain point so long as the peripheral portion of the divided nerve remained isolated from the central end but reached its highest point in those circumstances within a few weeks It could then readily be demonstrated by Stroebe s method that fine nerve fibres were present, possessing an axis cylinder surrounded by protoplasm in which were deposited fine drops of myelin, with a delicate sheath of Schwann and well marked nodes of Ranvier When the peripheral segment was at an early stage reunited to the central end of the divided nerve precisely the same changes occurred, the only difference being that the young nerve fibre progressed rapidly to adult dimensions All the above changes occurred in an excised [illegible] e subcutaneous [illegible] ter six months [illegible] d little further development to be capable of conduction was shown by the early return of sensation after secondary suture He had by careful examination of 40 such cases observed return of sensitiveness to the prick of a needle within one or two days of the secondary suture even though the nerves had been divided for long periods—e g in one case after 18 months—and the analgesia before the operation had been absolute In the remaining part of his paper Dr Kennedy described the structure of the sciatic nerve of a leg amputated at the knee 25 years previously and stated that fine nerve fibres were present in abnormal numbers This increased proportion of small nerve fibres was best explained on Mayer s view that degeneration and regeneration were constantly taking place as a normal process in nerves some of the regenerated nerves *having in the absence of their* normal peripheral connexions to acquire their normal dimensions

Professor FRANCIS GOTCH (Oxford), in discussing Dr Kennedy s observations said that they appeared to prove that axon formation of the type shown in the tail of the lizard &c could take place in mammals, but it still appeared extremely doubtful whether axons possessing the true nerve properties of excitability and conductivity could be thus formed in higher animals Halliburton and Mott had shown that a second section of the nerve caused degeneration in all the fine nerve fibres present in the peripheral part of the previously divided nerve, a result which seemed to show that the fine fibres had somehow entered the peripheral fragment of the nerve by sprouts from the central end He also doubted the genuineness of the so called immediate recovery of sensation within a few days of secondary suture, for he had been struck by the fact that accompanying the apparent hyperæsthesia to such tests as needle-pricks there was absolute anæsthesia to the far more sensitive test of stroking the hairs over the affected region. Head's remarkable investigations on himself showed plainly the [illegible] the stimulus so that it should not aff[illegible] marginal zone of the anæsthetic region.

Professor WESLEY MILLS (Montreal) called attention to the value of Bielschowsky's method of demonstrating the presence of axons, as also did Dr. WARRINGTON.

Professor W. H. THOMPSON (Dublin) thought that Dr. Kennedy had conclusively demonstrated the formation of structurally almost perfect nerve fibres in completely severed portions of nerve trunks.

Dr. H. M. VERNON (Oxford) read a paper on

The Protective Value of Proteids and their Decomposition-products on Trypsin.

The trypsin solution employed lost 56 per cent. of its proteolytic activity during exposure to the action of 0·4 per cent. sodium carbonate solution for one hour. In the presence of 1 per cent. of proteid it lost only 27 per cent., with 2 per cent. proteid only 13 per cent., and with 4 per cent. proteid only 7 per cent. Egg albumen had itself a marked antitryptic power and was therefore not employed for the above purpose. The protective value of the hydration products of proteids depended entirely upon their power of neutralising the sodium carbonate solution.

ANATOMY.

WEDNESDAY, JULY 27TH.

Professor A. THOMSON (Oxford), President of the section, occupied the chair and there was a very good attendance. After a few words of welcome from the President,

Dr. C. J. PATTEN (Sheffield) read a paper in which he suggested

A New Method of Mounting Anatomical Preparations for Museum and Dissecting-room Purposes.

He thought that the methods at present in vogue of mounting wet specimens were not wholly satisfactory and what was really wanted was a method of mounting in such a way that specimens could be readily removed from, and replaced in, the preserving fluid without the slightest detriment. To this end he suggested the following method. Four pieces of wood were taken and tacked together in the form of a frame which was then laid down on a perfectly clean sheet of plate-glass well oiled. Plaster-of-Paris, prepared by mixing 27 parts of the plaster with 22 parts of water, was then poured into the frame until the area inclosed by it was completely filled. A second sheet of plate-glass, well cleaned and oiled, was then quickly laid on the plaster. In a short time the glass was taken off and a slab of plaster-of-Paris, smooth and highly polished on both sides, could then be removed from the frame. The specimen to be mounted was placed on the slab and glass rods with pointed ends were employed to fix it and it was important that the rods should be fixed before the plaster had set quite hard. The specimen was then placed in an oblong museum jar and covered with a lid. Amongst the advantages resulting from the employment of this method Dr. Patten enumerated the following: (1) the specimen could be taken out and replaced at any time; (2) the specimen need not be handled; (3) the specimen was very suitably arranged for photographic purposes; and (4) it was easily re-tinted and re-lettered. He also thought that, in addition, the drawbacks of all methods of mounting wet specimens—viz., the discolouration of the preserving fluid and the collection of sediment—could be most easily overcome by his arrangement of an easily removeable lid which allowed of the entire vessel being periodically rinsed out. Such specimens always looked beautifully clean and bright.

The PRESIDENT showed in support of this method a frozen section which he had mounted some time ago on a slab of plaster-of-Paris. The great advantage was that the whole thing, specimen and slab, could be removed from the preserving fluid and that both sides of the section could be readily examined.

Dr. T. H. BRYCE (Glasgow) gave a lantern demonstration illustrating his researches on the [illegible]

Histogenesis of the Blood in Larval Forms of Lepidosiren.

He showed that in the blood and tissues free white elements of various forms were found at an early period and he classified them in three groups: (1) the mononuclear leucocyte (leucoblast) which might be large or small; (2) the eosinophile leucocyte (erythroblast); and (3) the polymorphonuclear form, of variable size and either hyaline or granular. With regard to the origin of these elements, Dr. Bryce pointed out that larval forms of lepidosiren had no bone marrow and that the liver had no place in the formation of the blood. All the varieties arose *in situ* from mesenchymatous elements first in the splanchnic mesenchyme and afterwards in the mesenchymatous tissue around the pronephric duct and mesonephric tubules. In lepidosiren the thymus had no share in the first origin of the leucocytes. [illegible] contained lymphoid elements the spleen a[illegible] of forming leucocytes and this, again, was preceded in that function by the specialised tracts of mesenchymatous tissue referred to above. Dr. Bryce's specimens clearly showed that at a very early stage at a spot on the inner side of the mass of yelk cells, and long before there was any spleen or thymus, a mass of cells became marked off from the general mass. A little later, at a time which he called the "critical stage," the mass of cells was cut off from the yelk cells. They contained various forms of leucocytes and becoming converted into wandering cells eventually became the leucocytes. In his later slides Dr. Bryce showed the formation of the spleen and in the spaces of the organ young white and young red corpuscles, and lastly he showed the formation of the thymus in which only a few leucocytes seemed to be found.

Professor A. ROBINSON (London) asked for further information concerning the localisation of leucocyte formation and also for Dr. Bryce's differentiation of mesenchyme from mesoderm.

Professor F. KIEBEL (Freiburg), referring to his own work and that of his pupils, Professor Tonkoff of St. Petersburg and Dr. Piper of Berlin, said that in lower and higher vertebrates they had evidence of the origin of the blood from mesenchymatous structures and he was pleased that the interesting investigation of Dr. Bryce on lepidosiren on the same lines seemed to be confirmed. The question of the origin of leucocytes in the thymus he was now working at and, so far as he had gone, he could not come to a confirmation of Dr. Bryce's results. At the same time, seeing that his own investigations were unfinished, he preferred not to give any decided opinion.

In reply to Professor ROBINSON, Dr. BRYCE explained that the tracts in which the leucocytes were found developing were localised. The general mesenchymatous tissue did not show the same phenomena and in regard to his results, while they held good only for the form under study, they were to be considered as a contribution to the establishment of a general theory of the leucocytes.

Giants and Dwarfs.

The remaining part of the morning was devoted to a discussion on Giants and Dwarfs. This was introduced by Professor D. J. CUNNINGHAM (Edinburgh) who proceeded to give a most interesting account of the skeleton of the Irish giant Cornelius Magrath, which had been in the possession of Trinity College, Dublin, for close upon one and a half centuries. There was no museum specimen in Ireland better known or one which had created a wider interest. On account of his great height, references to Magrath were found in almost every work on anthropology in which the human stature was discussed. Yet his reputation in this respect rested upon an altogether fictitious basis, inasmuch as Magrath could not claim to first rank as a giant. Most contradictory statements had been made in regard to his height. Humphry gave 8 feet 6 inches, Sternberg 8 feet 5 inches, Wood 7 feet 9 inches, and Topinard 7 feet 4 inches. There was, however, only one record of measurement taken during Magrath's lifetime by a competent and trustworthy observer and this was in Florence. Professor Bianchi after a most careful series of measurements made him out to be 7 feet 5 inches. This did not quite correspond with the height of the skeleton in Dublin which was 7 feet 2½ inches, but the discrepancy could be explained by the facts that the skeleton was not well put together and that it had lost height in the process. Professor Cu[illegible] giants [illegible] made of history and reminde[illegible] in earlier records were [illegible] eight, no matter how great or [illegible] d impossible. It might be said that the advertised heights of giants were nearly always too high and he was doubtful if there was any authentic record of a giant over 8 feet 2 inches or 8 feet 3 inches, though he did not regard this as the limit of stature. He showed slides of Wehde, a giantess who was said to be 8 feet 4½ inches in height, and of Winkelmeyer, a giant who was said to be 8 feet 6½ inches, but Virchow, who measured the giant most carefully, found that he was 7 feet 5⅝ inches. Slides were next shown illustrating the osteology of Magrath, which indicated that he suffered from acromegaly in its most pronounced form. And nowadays the leading interest attached to giantism was to a large extent centred in the relation which it presented to that disease. That both giantism and acromegaly were morbid processes there could be no doubt, but the precise relation which existed between the two conditions was the subject of much discussion. More than 13 cases of giants who were acromegalic were now on record. The view held in most general favour at present regarded giantism and acromegaly as due to the same morbid process, the results differing merely according to the period of incidence of the disease. If the morbid process occurred in a child or young person before union of the epiphyses a giant resulted, whereas if it occurred in an adult after the period of general growth had stopped acromegaly resulted. Meige had pointed out that acromegaly never preceded giantism and that in 50 per cent. of giants acromegaly followed.

Professor B. C. A. **Windle** (Birmingham) said that dwarfishness might be produced by various causes, being pathological or teratological, and to make our present distinctions clear he [illegible] ation; pathological drawfs, [illegible] (very rare), cretinoid, and [illegible] achondroplasic. Many dwarfs undoubtedly belonged to the latter class and the condition was also met with amongst animals and could be perpetuated by breeding, as, for example, the dachshund and the Basset pig. Teratological dwarfs were phocomelic where parts of the limbs were absent, micromelic where limbs were complete but unduly small, and nanosomes (or true dwarfs) which might be primordial (sexual)—i.e., small men and women; or infantile (asexual)—i.e., permanent children.

Mr. **Hastings Gilford** (Reading) regarded both dwarfism and giantism of marked degree as almost necessarily a sign of disease or malformation and such cases were, in reality, not in the domain of pure anatomy but belonged to pathology. He gave a most interesting demonstration of actual cases, illustrating the main types of dwarfs due to disease or malformation. In none of these could he trace the influence of syphilis, cretinism, congenital heart disease, or any other disorder. One was a species of infantilism, a defect not only of growth but also of development. This form of infantilism had been termed "ateleiosis," for those who were so affected seemed never to arrive at perfection. Another form of dwarfism exhibited characters of infantilism, premature old age or senilism, and abnormal development. In none of the conditions could the cause be determined. Mr. Gilford thought that there was reason to believe that the pituitary body was the seat of the disease and Dr. Woods Hutchinson had found actual disease of this body in one case, though it was apparently not of the same type as those to which he had referred.

Dr. G. A. **Gibson** (Edinburgh) supported the previous speakers and said that he regarded giantism as bound up in some way with acromegaly. He showed skiagrams of a case of this disease beginning at 19 years of age and he thought that the pituitary body might be regarded as a regulator of growth in some way.

Professor A. F. **Dixon** (Dublin) brought out an interesting association between the pituitary body and the facial bones affected in acromegalic disease. As was well known the pituitary body developed partly from the neural tube and partly from the buccal cavity. When the body was diseased, as in acromegaly, there was a remarkable selection of the facial bones in such a way that those developed as membranous bones in connexion with the primitive mouth or [illegible] ere were [illegible] those in [illegible] t and he referred to certain examples of great stature in which the lower extremities only were involved, a condition which was probably due to delayed union of the epiphyses and diaphyses of the long bones.

Dr. **Gustav Mann** (Oxford) suggested that the condition of the sympathetic nervous system *ought to be studied* in connexion with abnormal growth, inasmuch as removal of the superior cervical ganglion in newly born animals produced overgrowth of the head and ears on the same side as that in which the ganglion had been removed.

Dr. R. **Gladstone** (London) agreed with this and suggested that the enlargement of the pituitary gland in acromegaly and some forms of giantism was possibly secondary to a primary affection of the sympathetic system, and might perhaps be compared with hypertrophy of the thyroid gland in exophthalmic goitre.

Professor **Anderson** agreed that the evidence went to show that many of the so-called giants and dwarfs were pathological and thought that the condition was associated with a transfer of ossific matter from one place to some other.

Dr. **Patten** in support of Dr. **Thompson** mentioned a skeleton which he had described of an adult in which the limb bones were very long and heavy but in which there were no signs of acromegaly.

Finally, Professor J. **Symington** (Belfast) agreed with the pathological view of giantism and said that there were very few authenticated examples of individuals who had deviated markedly from the common standard, either one way or the other, that were really healthy.

PATHOLOGY.

WEDNESDAY, JULY 27TH.

The proceedings of the section were opened by the **President**, Dr. **James Ritchie**, who took

Immunity

for the subject of his address with the object of presenting a general review of the position of our knowledge in this branch of experimental research, pointing out that a general consideration of ascertained facts was rendered necessary owing to the divergent character of the studies, ranging from physical chemistry to hæmatology, now being prosecuted by different workers in the attempt to elucidate the problems involved. After paying an appreciative tribute to the genius of Ehrlich, whose theories of immunity, though promulgated some six years ago, still dominated the whole situation, Dr. Ritchie stated the main points for consideration as: (1) the natural immunity observed in certain circumstances to exist towards disease; (2) the artificially acquired immunity which came about in disease contracted under what might be called natural conditions of infection; and (3) the relation of those conditions to recovery in any case of infectious disease. The solid basis of facts already arrived at regarding the process of immunisation was briefly summed up. Certain of the effects of some bacteria, and most of the effects of other bacteria, could be traced to extremely soluble poisons of unknown composition and which frequently possessed a selective action on special tissues and when injected into the body of a susceptible animal rapidly disappeared from the circulatory fluids, probably in consequence of their fixation in susceptible cells to which they sometimes travelled by special paths. By methods of immunisation an almost limitless degree of immunity could be developed in a sensitive animal, associated with the appearance in the serum of that animal of a "specific" substance capable of neutralising that toxin which stimulated its genesis. Further, that the neutralisation of toxin by antitoxin was of the nature of a chemical union but that such union was dissociable. The elaboration of soluble toxin was not, however, a universal characteristic of bacteria and in the case of most it was necessary, not only to neutralise poisons, but also to destroy the bacteria themselves if the animal body was to escape destruction. So far as concerned highly immunised animals it might be stated that the destruction of the bacteria was associated with the presence in the serum of the immune animal of two substances—a thermo-labile "complement" normally occurring in the animal species involved and a thermo-stable "immune body," specific in character and *probably entirely absent* in normal serum and which would act deleteriously only on the protoplasm which stimulated its formation. The reactions of these two substances on one another and on the bacteria to be destroyed were of a chemical nature and analogous to the interaction of toxin and antitoxin. The view that these bodies did not exist apart from cells *in vivo*, and the results of Walker, which strongly point to the leucocytes as the source of the complement, also the contention *as to coincident and co-related cytolysis* associated with extra-cellular destruction of bacteria, were commented upon. Contrasting the infective with the toxin-producing bacteria it was pointed out that though we were practically certain that the presence of toxin in the animal body stimulated the production of atitoxin we did not know what portion of bacterial protoplasm stimulated the production of bactericidal substances. Dr. Ritchie, still speaking of the infective bacteria, remarked on the inadequate importance attaching to the metabolic aspects of the accompanying fever as compared with those dealing with the disturbances of heat regulation and suggested that part of the increased metabolism associated with infective fever might be the expression of work done by cells actively engaged in operating on the invading bacteria. Next the part played by persons in the production of the general effects caused by different infective bacteria was considered and it was pointed out that these poisons were for the most part intracellular and were probably derived from the breaking up of bacterial protoplasm which followed on death both in cultures and in the living animal and were responsible for what might be termed the non-specific effects of infective bacteria. Mention was made of the experiments of Pfeiffer and Kolle supporting the thesis that in the case of the infective bacteria the intracellular toxins which produced the pathogenic effects were not concerned in the production of the immunity which could be developed against these bacteria, for by appropriate dosage an immune animal could be made to exhibit the capacity of killing all the bacteria injected into it, and yet then succumb to the effects of the toxins which the death of the bacteria liberated from the bacterial protoplasm. After briefly commenting on the chemical reactions of toxin and antitoxin and contrasting the views of Ehrlich in explanation of the associated phenomena with those put forward by Arrhenius and Madsen, reference was made to what might be justly considered the three most important pieces of work bearing on immunity during the last year or so. First, that by Meyer and Ransome which established the fact that tetanus toxin reached the nerve cells by the path of the motor axones only, while their further observations went to show that antitoxin was conveyed to the nerve cells by the much slower route of the lymphatics, thus explaining the experimental fact that the injection of a very large excess of antitoxin would not protect an animal against the subsequent introduction of even a small amount of tetanus toxin into a motor nerve—observations which if confirmed destroyed the theory put forward by Ehrlich that antitoxin was formed in the nerve cells. Next, the work of Muir on the interaction of the constituents of hæmolytic sera which went to prove that when corpuscles were thoroughly saturated with immune body it was possible to dissociate a certain amount of immune body and cause it to become attached to fresh corpuscles, and further, that when red blood corpuscles were saturated with both immune body and with complement still some of the immune body but none of the complement could be dissociated from the combination—observations incompatible with the view that immune body formed a link between corpuscles and complement. Finally, the work of Wright and Douglas, which consisted in the elaboration of methods of precision which had enabled them to study the laws which govern the phenomenon of phagocytosis and to demonstrate the presence in the serum of a substance they termed "opsonin," whose function it was to unite with the bacteria, and by a process of sensitisation render them capable of ingestion by the phagocytes.

Dr. W. BULLOCH (London) was then called upon to read his paper on

The Cellular Aspects of Immunity.

Commencing with a chronological and historical review of the facts and theories dealing with the relationship of the body cells and fluids to the immunity problem, founded on a study of the original papers, Dr. Bulloch contrasted the sequence of the humoral and cellular theories of disease with a like sequence of theories as applied to immunity. He drew attention to the exhaustion theory of Pasteur which, based on observations of flask cultivations of the bacillus of fowl cholera, was insufficient to explain the process of immunisation as observed in the living animal, as it failed to account for the facts that immunity could be produced by means of the soluble products of bacteria and that the tissues of immune animals were well adapted as media for the growth of micro-organisms, although the possibility of certain forms of natural immunity owing their existence to absence of suitable nutritive pabulum was deserving of consideration in the light of Ehrlich's analogous suggestion of the absence of suitable receptors. Chauveau's retention theory, briefly discussed, was followed by a *résumé* of the zoological observations extending over many years, concerning the means employed by the infected host to resist microbial infection upon which Metchinkoff subsequently founded his phagocytic theory of immunity which might be briefly stated as the destruction of the virus in the interior of certain mesodermic cells by a process of digestion. In the meantime the humoral theory propounded by Buchner, based on the observations that the destruction of bacteria took place in cell-free serum *in vitro*, owing to the action of certain substances which he termed alexins, and that the bactericidal properties of the serum could be inhibited by heating to 56° C., found many supporters. The proposition that these alexins were derived from leucocytes led to researches that culminated in the partial fusion of the rival cellular and humoral theories, although the discovery of antitoxins at about this time raised the question of the site and mode of manufacture of anti-bodies. Denys and Havet showed by filtering dog's blood through paper that the serum was less bactericidal for bacillus coli than the blood and concluded that the leucocytes which were held back in the process of filtration were concerned in the formation of alexin, although they stated that cells and serum acted together in a manner varying with the species of animal and the nature of the virus. From this time on much research had been devoted to the question of the origin of the alexin and the question had been complicated by the fact that Buchner's alexin comprised two bodies—a complement (alexin proper) and an immune body. Metchnikoff considered that both these bodies were contained in certain phagocytic cells, the macrophages, and affirmed that plasma was alexin-free and contended that the alexic action was of the nature of a digestive process—a contention entirely negatived by the experiments of Grüber and others. Many observations were undertaken with a view to extracting alexin from the leucocytes but without success, although Dr. Bulloch by simultaneously measuring the amount of hæmolytic constituents on the one hand and the mono- and poly-nuclear leucocytes on the other, found that the appearance of the hæmolytic immune body in the serum was coincident with a rise in the number of mononuclear leucocytes, while by producing an artificial polynuclear pseudo-eosinophilia there was a coincident rise in the amount of complement. In the case of immune sera Pfeiffer, Wassermann, and others found that the main factory of anti-bodies was situated in the spleen, bone marrow, and lymph glands. From the mass of conflicting detail Dr. Bulloch concluded that the existence of alexins was undoubted but nothing certain was known of their origin; their existence in plasma was not definitely settled but the balance of opinion was in favour of their occurrence outside the cells; it was improbable that they acted like digestive ferments. Although highly probable, it was not proved that leucocytes secreted alexin, the diversity of opinion and the uncertainty being due to the complexity of the subject and defects in technique. Wright and others had shown that serum, whether normal or immune, was not bactericidal for the staphylococcus, using the term in its strict sense, and Dr. Bulloch had demonstrated the same fact with regard to the bacillus pyocyaneus; and in considering the conflicting claims of serum and cells in this connexion it must be questioned whether immunity was necessarily always antitoxic or bactericidal. The work of Wright and Douglas had shown that in phagocytosis a cardinal rôle was played by thermolabile substances, termed opsonins, present in the serum which had nothing in common with Buchner's alexins, and that during the process of active immunisation the opsonic value of the serum was definitely increased. Dr. Bulloch working with Mr. E. E. Aitken had confirmed the observations of Wright and Douglas on opsonic immunity and had found that the amount of opsonins in the serum could not be increased indefinitely as the result of inoculation, although opsonin was somewhat analogous to agglutinin. Further, serum contained a number of opsonins, each specific for given bacteria, and which could be removed in succession by saturation—results in harmony with the pleurimistic doctrines of Ehrlich. Thus, in addition to antitoxic and bactericidal immunity, there also existed opsonic immunity—a phenomenon corresponding largely to the phagocytosis of Metchnikoff.

Dr. GEORGES DREYER (Copenhagen) then read a paper by himself and Dr. A. J. JEX-BLAKE (Oxford) on

Agglutinins in Relation to Immunity.

The previous work of Nicolle and Joos was briefly reviewed and the generally accepted explanation of this phenomenon was stated as the combination of agglutinable substance contained within the bacteria themselves with agglutinin present in the serum, which combination, however, did not take place except in the presence of a salt. The influence of Ehrlich's side-chain theory upon [illegible] to explain the mode of action of [illegible] next considered and the work of [illegible] to. These authors described the agglutinins as being composed of a specific, labile, precipitating group and a more stable combining group; in the same way the bacteria were described as containing a labile agglutinophoric group and a [illegible] the formation [illegible] influence of [illegible] that these agglutinoids possessed so great an affinity for the bacterial agglutinable substance as to be able to prevent agglutination—in the presence of unchanged agglutinin even—by combining with the bacterial haptophores. Dr. Dreyer and Dr. Jex-Blake carried out a series of observations by testing from 22 to 24 hour-old broth cultures of bacillus coli, or cultures of similar age, on agar, emulsified in 0·85 per cent. salt solution made up to an arbitrarily chosen standard of opacity, against the agglutinating immune sera of rabbits and goats previously immunised against bacillus coli and other agglutinants. The experiments were carried out by placing 1·5 cubic centimetres of bacterial emulsion or bouillon culture of bacillus coli in each of 24 small test tubes, adding a quantity of agglutinant to each of tubes 1 to 23, gradually diminishing so that tube 1 contained 100 times as much as tube 23 and making the contents of each tube up to 2·5 cubic centimetres. Tube 24, containing only bacteria and salt solution, served as a control. The tubes were well shaken, then heated in a water bath at 37° C. for from one and a half to two hours, then the amount of agglutination was measured, the measurements being repeated after further 18 hours at room temperature when necessary. The measurements were made partly by Madsen's method—i.e., selecting as a standard a moderately agglutinated tube and comparing it with tubes of other series—and partly by determining the tube showing the minimum agglutination visible to the naked eye in each series. The results yielded by the two methods did not always agree and discrepancies were particularly noted in cases where the serum had been first treated by heat or chemical reagents, from which Dr. Dreyer and Dr. Jex-Blake argued that the reaction velocity of the chemical or physical processes resulting in the agglutination of bacteria was a very variable factor. The age of agar cultures had little influence upon the agglutinability of the bacteria, but broth cultures showed diminished agglutinability with increasing age, due to the presence of toxins which combined with the agglutinin and were precipitated by excess of it. Eisenberg and Volk in investigating compounds formed by bacteria and agglutinins, found that the absolute absorption of agglutinin by a constant quantity of bacteria increased with increasing quantities of agglutinin; while the coefficient of absorption—e g., the ratio of agglutinin absorbed by bacteria to agglutinin originally present—fell. Dr. Dreyer and Dr. Jex-Blake found, using the filtrate of a 19-day broth culture of bacillus coli, that with increasing amounts of agglutinin its absolute absorption by the bacterial products increased, but that the absorption coefficient remained the same. When investigating the action of heat on the agglutinability of bacteria they noted that heating up to 60° C. scarcely altered the agglutinability of coli emulsion, but heating to 70° C. and upwards considerably diminished it, the diminution, however, being less marked with old cultures, and instanced a 24-hour-old culture requiring 35 times as much agglutinin after heating to 100° C. to produce a similar result as was needed by the unheated culture, but with a 50-day-old heated culture only 3·6 times as much agglutinin was needed as by the unheated emulsion. The suggestion that the heating destroys the agglutinable substance of the bacteria was denied by Dr. Dreyer and Dr. Jex-Blake for their experiments showed that prolonged—from two to 13 hours—heating of the emulsion at 100° C. partially, or even entirely, restored its agglutinability, a phenomenon which they explained by assuming that the agglutinin-fixing body, which was dissolved out into the fluid during the early stages of the heating, was destroyed by prolongation of the heating process. They also suggested that change in bacterial surface tension might be involved. In a similar way Dr. Dreyer's experiments showed that megatheriolysin heated to 60° C. for 30 minutes had no effect on goat's blood but after heating to 100° C. for ten minutes two and a half volumes would produce a similar amount of hæmolysis as one volume of the unheated lysin, whilst the identity of the hæmolytic reaction in the two cases was proved by the inhibition of the phenomena by the addition of antimegatheriolysin. In discussing the influence of heat on agglutinin itself Dr. Dreyer and Dr. Jex-Blake showed that when immune serum was heated for half an hour at 65° C. half the agglutinating power appeared to be lost if the preparations were examined at the end of two hours at 37° C., but when examined after a further period of 18 hours at room temperature the destruction of agglutinin was seen to be *nil;* and, further, that the greater the dilution at which the serum was heated the greater was the apparent destruction of agglutinin, from which they argued that the "zone of inhibition"—i.e., the production of more marked agglutination when the serum was present in small quantities than when present in large quantities—was not a consequence of the conversion of agglutinin into agglutinoid as maintained by Eisenberg and Volk, but that the phenomenon might be explained, partly at any rate, by a slowing of the velocity of the agglutination reaction. The agglutination of bacillus coli and bacillus typhosus by acids was then briefly described and its peculiarities were noted. The reaction was indistinguishable both naked eye and microscopically from that [illegible] emulsions of bacillus [illegible] were readily agglut [illegible] cultivations with diffi [illegible] of the phenomenon was that it was produced either by relatively large or by relatively small amounts of acid but not by the intermedi [illegible] cence of the emulsion [illegible] mediate zone of inl [illegible] density of emulsion. The addition of free acid to bacterial emulsion [illegible] presence c [illegible] it to one-h [illegible] third, although each of these quantities of acid acting alone would produce marked agglutination. Caustic alkalies did not agglutinate bacterial emulsions but rendered it less agglutinable. Acting upon immune sera an alkali was more destructive than an acid, though in each case the destruction of agglutinin was less than it appeared, as could be proved by suitable neutralisation.

Dr. THOROLD MADSEN (Copenhagen) then gave his paper on

The Neutralisation of Lysins,

in which he first described and demonstrated Ehrlich's conception of diphtheria toxin as composed of a series of bodies—proto-toxin, deutero-toxin, trito-toxin, and toxin, differing in toxicity and also in avidity for the antitoxin, by graphic methods with the aid of the familiar "spectrum" and "stair-step" curve, basing his remarks on the concrete example of the complete neutralisation of 100 toxic units *in vitro* by a quantity of antitoxin to which the numerical value of 100 had been assigned and showing how this theory of the composition of the toxin was supported by the results of partial saturation experiments. Passing on to his own experiments on tetanolysin (the hæmolytic substance of tetano-toxin) it was shown that almost identical phenomena could be demonstrated by similar means but that if the antilysin was added in very small increments to the tetanolysin the neutralisation could be represented by a regular curve showing no trace of the stair steps which indicate the different components of the toxin. Contrasting the results thus obtained with those observed during the neutralisation of a strong base by a strong acid on the one hand and of a weak base by a weak acid on the other, the similarity of the hyperbolic curves produced during the neutralisation of tetanolysin by antitetanolysin and of ammonia by boric acid was noted, and it was found that the necessary data could be calculated in a corresponding manner by the use of formulæ deduced from the *law of mass action* (of Guldberg-Waage): the formula for toxin-antitoxin combinations being expressed as

$$\frac{\text{Free toxin.}}{\text{vol.}} \cdot \frac{\text{Free antitoxin}}{\text{vol.}} = \text{K} \frac{(\text{Toxin-antitoxin})^2}{\text{vol.}}$$

where K is the constant of dissociation, and indicating that one molecule of antitoxin combines with a constant amount of antitoxin (perhaps one molecule) to form two molecules of one or more combinations of toxin-antitoxin. This application of the established laws of physical chemistry to toxin-antitoxin combinations and their subsequent partial dissociation explained the long zone of neutralisation—the continued addition of antitoxin causing continued diminution but never absolute disappearance of the amount of free toxin. Dr. Madsen then detailed his observations on diphtheria toxin which showed after the perfection of his methods a perfectly satisfactory correspondence between calculated and observed values and yielded regular curves without any indication of the presence of prototoxoid, and the deduction from these observations was that there was no reason to consider the diphtheria toxin as so highly complex a body as Ehrlich described. In this connexion Dr. Madsen commented on the varying values of the dissociation constants, from the small diphtheria constant to the highly dissociated curve of the tetano-lysin constant. Dr. Madsen, in association with Walbum, carried out similar observations upon several other bodies—ricin, rennet, vibriolysin, staphylolysin, and streptolysin, and their anti-bodies—and obtained similar curves and a similar close agreement between observed and calculated values for the various combination, while Dr. Madsen, together with Dr. Noguchi, obtained identical results with cobra, crotalus, and mocassin venom in combination with their respective antivenins. Dr. Madsen then proceeded to discuss his observations in association with Noguchi and Walbum on the hæmolytic action of acids and alkalies, vibrio lysin, streptolysin, ox-blood hæmolysin, the agglutinating power of ricin, and mercuric chloride upon erythrocytes, typhoid and coli agglutinins, the precipitating action of egg albumin precipitin, &c., with regard to the rates of reaction and the relations to temperature, and showed that the formula $\frac{C^1}{C^2} = E\frac{M}{R}\frac{(T_1 - T_2)}{(T_1 - T_2)}$ held good, when C_1 and C_2 are the concentrations at the temperatures T_1 and T_2, E, the base for the natural logarithms, $\frac{M}{R}$ a constant and T_1 and T_2 the absolute temperatures. Dr. Madsen concluded his remarks by pointing out the application of the law of monomolecular reactions (cf. sugar inversion) to the attenuation of poisons by heat by means of the formula $\frac{d_x}{d_t} = K(A - x)$, where $A - x$ is the concentration of the toxin at the time t, K is a constant and A the concentration at the beginning of the experiment.

Professor S. H. C. MARTIN (London) next read his paper on

Snake Venom in Relation to Immunity.

Having remarked upon the extreme potency of some snake venoms—0·000025 gramme per kilogramme causing death in the rabbit—the author pointed out that so far all attempts to separate the toxic principle from the modified proteid in which it existed had been unsuccessful and at present the toxic principle must be regarded as a special grouping of a portion of the atoms in the complex venom proteid molecule, although the suggestion was put forward that it might be a side chain and might ultimately be capable of differentiation. Venoms were shown to be highly complex in composition when examined by biological methods, many containing one or more but not all of the following: fibrin ferment, proteolytic ferment; neurotoxin, with special affinity for the respiration centre; neurotoxin with special affinity for muscle nerve endings; various cytolysins; anti-bactericidal body; agglutinin for red blood cells, &c., and the rapidly fatal action of some venoms was due to the neurotoxin causing respiratory paralysis, while others by their fibrin ferment produced intravascular clotting. Years ago Professor Martin expressed a belief in the unity of constituents having similar physiological action although derived from different snakes. More recent observations, however, on the differentiation of these bodies by means of their combining reactions with various antisera led him to the conclusion that although there might be similarity of the toxophoric groups of these various bodies their haptophoric groups were dissimilar. The chief interest of the snake venoms, however, lay in the analogy existing between them and the toxins elaborated by some bacteria and the important part played by experiments on snake venom in the development of our knowledge of immunity. Early experiments in the preparation of therapeutic antiserum led Calmette to maintain that such were not specific but this view had not been supported by the observations of Professor Martin and others and Calmette had recently admitted the existence of neurotoxin and hæmorrhagin, and further that the antitoxic serum obtained as the result of injecting cobra venom was without action on hæmorrhagin, but that employing cobra venom and viper venom a polyvalent serum could be prepared. Professor Martin was unable to confirm this statement nor was it supported by the observations of Tidswell on the venom of Australian snakes. These observations and those of Lamb, Rogers, and others, showed that the various sera were highly but not absolutely specific and that neutralisation might sometimes be accomplished by means of greatly increased quantities of heterogeneous serum. The advantages of venoms over bacterial toxin in experimental work upon immunity being greater stability when in the dry state and also in solution, the fact that they withstand heating to 70°C. or even boiling without being destroyed and, finally, their hæmolytic properties which, permitting test-tube experiments, made for greater accuracy and precision. After briefly summarising the work of early observers on the antagonism between toxins and antitoxins, the work of Fraser on cobra venom and antivenene was quoted in support of the hypothesis that this antagonism was of the nature of a chemical reaction. Professor Martin then referred to experiments carried out in association with Cherry in which filtration through a porcelain filter candle choked with gelatin was employed to separate toxin from antitoxin, the larger size of the molecule of antitoxin preventing its passage through the filter, by which it was shown that some chemical relationship between toxin and antitoxin was apparent after the mixture had stood for half an hour, because the filtrates obtained from these mixtures were harmless to guinea-pigs, and the great molecular size and complexity of the toxin and antitoxin was held to explain the high velocity coefficient of the reactions involved. Repeating some experiments by Fraser Professor Martin had found that when simultaneously injecting venom and a neutralising dose of its antitoxin subcutaneously in different parts of the body 20 times greater dose of antitoxin was needed than when the venom was introduced subcutaneously and the antitoxin intravenously, pointing to the probability of the more rapid absorption and fixation by the cells of the toxin.

A further contribution to the study of this branch of immunity was then made by Dr. NOGUCHI who presented the result of his

Therapeutic Experiments with Anti-crotalus and Anti-mocassin Sera.

After referring to the specificity of anti-sera prepared for the venoms of the crotalus, mocassin, and cobra Dr. Noguchi showed that a given dose of anti-cobra serum protected against five minimal lethal doses of cobra venom, when tested on the guinea-pig, only one of water-mocassin venom, and was quite ineffective against crotalus venom; and, further, that a given quantity of anti-cobra serum neutralised two minimal hæmolytic doses of cobra hæmolysin *in vitro*, but had no anti-hæmolytic action against crotalus or mocassin hæmolysin and so on through the remainder of the cross actions; and, further, that there was no constant relation between antitoxic and anti-hæmolytic values of an antivenene; hence the standardisation of antitoxic power of a serum could be made by simple hæmolytic tests in vitro. Turning then to the subject proper of the paper, experiments were quoted to show that two minimal lethal doses of a crotalus venom injected intraperitoneally killed a guinea-pig four to five hours later, and of a mocassin venom three and a half to five hours, the symptoms being similar in each case. Series of guinea-pigs were taken, each injected with two minimal lethal doses of crotalus venom, and at intervals of an hour different animals were treated with various doses of anti-crotalus serum. It was then found that it was possible to save the animal even at the most critical stages of intoxication so long as the experimental animal was able to stand. Similar results were obtained with anti-mocassin serum. The results were well shown in a table, from which the following is taken, and demonstrated conclusively the high therapeutic value of these two antivenenes.

Anti-crotalus serum		Crotalus venom (2 m l d.)	Anti mocassin serum		Water mocassin venom (2 m l d)
Time	Dose.		Time	Dose.	
Control.		Death average time 4 hours 25 minutes	Control.		Average time—fours hours 21 minutes
1 hour	1 c.c	Recovered	1 hour	1 c.c.	Death delayed to ten hours
2 hours	1 c.c	Death delayed to six hours		2 c c.	Recovered
	2 c.c.	Recovered.	2 hours	2 c c.	Death delayed to 3½ hours
hours	1 c.c	Death delayed to five hours		4 c c	Recovered
	4 c c.	Recovered	3 hours	4 c.c.	Death delayed to four hours
4 hours	4 c.c	Death delayed to nine hours		8 c.c.	Recovered
	8 c c	Recovered.	4 hours	10 c.c.	Recovered

From the result of his experiments the author concluded that the action of antivenenes was highly if not strictly [illegible] was variable, and that the estimation of one constituent gave no indication of the strength of the other

Dr M A RUFFER (Alexandria) then gave his paper on

Hæmolytic and Hæmoso.ic Sera,

detailing experiments carried out in conjunction with Dr Crendiropoulo on the effects produced on the blood by the injection of urine and bile The word hæmosozin, it was explained was coined to obviate the use of the term anti hæmolysin while the term lysogen was employed by the author to denote any substance which when injected into the animal body gave rise to the production of a hæmolytic serum Fresh urine of man and of animals injected into rabbits stimulated the production well within a week of a [illegible] also [illegible] was [illegible] was completely inactivated by 120° C for a similar time, it did not dialyse readily and was destroyed by digestion with mineral acids (5 per cent hydrochloric acid) and by long contact with alcohol Lysogen was precipitated by alcohol and by ammonium sulphate and was probably not one of the substances hitherto isolate [illegible] Miss Amos had shown that neit [illegible] uric acid, xanthin, &c, were [illegible] also contained a hæmosozin w [illegible] quantity when the urine was heated to 100° C and was destroyed by exposure to 120° C for 30 minutes The similarity of the reactions of these two substances should not be taken as proof of identity, for lysogen was specific hæmosozin was not, and would neutralise the hæmolysin of any serum Experiments carried out with bile showed that the hæmolysis produced in vitro could not be attributed to bile salts only for after dialysis the salt free bile was still hæmolytic On the other hand, the ethereal extract of bile was hæmosozic, and so was normal serum when tested against bile of an animal of the same species Hæmo ozic sera produced by the injection of bile neutralised completely the hæmolysins present in the serum of animals injected with urine

The section was then adjourned till 2 45 P M On resuming the sitting in the afternoon

Professor ROBERT MUIR (Glasgow) followed with a paper on

Hæmolytic Sera in Relation to Immunity

in which his remarks were limited to a discussion of three questions First the nature of the combination of anti substances, next the constitution and mode of action of complements, and lastly the combining relationships of receptor, immune body and complement In considering the saturation phenomena of immune body and red corpuscles its similarity to the process of neutralisation of toxin by antitoxin was remarked and it was pointed out that the amount of immune body which enters into combination was not a fixed quantity but varied with the amount of immune body present and that the reaction was in fact, an example of mass action, similarly the combination of complement and anti complement followed the same physical laws and in both cases the combination was a reversible process With regard to the second question, the researches of the author confirmed Ehrlich s views, and it might be accepted that complement is analogous to toxin and like it possessed two chief atom groups—a combining or haptophore group and a toxic or zymotoxic group, and the opinion was expressed that the combination of *complement with red corpuscles treated with* immune body was a very firm one end that the saturation phenomena observed might be due in part to the presence of "complementoids analogous to 'toxoids Further, the author admitted the probability of the multiplicity of complements and agreed with Ehrlich that more than one complen [illegible] a given serum On the other har [illegible] immune body might have several [illegible] and might so take up several different complements The zymotoxic group was much more labile than the haptophore group and might be destroyed by heat while the latter persisted, the resulting body being a complementoid which injected into an animal of a different species from that supplying the serum stimulated the production of anticomplement Intact corpuscles even when treated with immune body were almost impervious to complementoid, but when the toxic action of complement had occurred complementoid readily entered into combination Turning to the question of variations of toxic activity as contrasted with the combining affinities, experiments were *quoted which led to the important conclusion that the* therapeutical efficiency of a bactericidal serum depended not only on the ready combination of the compliment concerned through the medium of the immune body, but the bacterium would be sensitive to the action of the toxophore group of the complement Referring to the combining affinities of receptor immune body, and complement, it was pointed out that Bodet s theory that the immune body rendered the living cell ensitive to the action of complement was insufficient to explain the observed phenomena, although from the fact that neither receptor nor immune body was capable of taking up complement when separate but did so when combined one of the first two sensitised the other to the combining affinity of complement still the process was undoubtedly a chemical combination of these three different molecules The author concluded by referring to some of his experiments which showed that from a combination of receptor and immune body fully saturated with complement (the excess being afterwards removed) immune body could still be dissociated and that it came off as immune body alone—a phenomenon which it was impossible to explain on the supposition that immune body was a link between the receptor and complement molecules

Dr A E WRIGHT (London) then discussed

Opsonins and their Relation to Immunity

Prefacing his remarks by a short historical survey of theories of immunity, Dr Wright deplored the existence of an incurable disease prevalent among scientific workers and characterised by the building up of complete pictures of proce ses under observation from inadequate facts eked out by vivid imaginations Passing on to the results of a study of the changes induced in the blood by the inoculation of typhoid vaccine he referred to the preliminary negative phase characterised by lo s of bactericidal power, followed by a positive phase in which bactericidal power was increased and quoted experiments which clearly showed that after inoculation with small doses the negative phase was slightly and the po itive phase well marked but the reverse was noted after inoculation with large doses The speaker in association with Captain S R Douglas, I M S had investigated the phenomena grouped under the name of phagocyto is by improved methods which they had devised for the purposes which moreover, enabled them to manipulate cells of the blood quite apart from the serum One of the first results of this work was to [illegible] rease of phagocytic [illegible] ines was due to [illegible] In particular one set of experiments quoted brought out the point very clearly When the phagocytic index was calculated by the methods described, and assuming A to be an individual treated with, say staphylococcus vaccine then (1) A s white blood cells three volumes + A s serum three volumes + staphylococcus emulsion one volume gave phagocytic index of 25 7, (2) control white blood cells three volumes + control serum three volumes + staphylococcus emulsion one volume gave phagocytic index of 13, (3) A's white blood cells two volumes + control serum three volumes + staphylococcus emulsion one volume gave phagocytic index of 13, and

(4) control white blood cells three volumes + A's serum three volumes + staphylococcus emulsion one volume, gave phagocytic index of 28·2. Further experiments showed that these results were due to the presence in A's serum of a substance which by its action on the bacteria rendered them an easy prey to the phagocytes and to this substance the name opsonin had been applied.

The meeting then adjourned at 4.30 P.M. and at 4.45 P.M. Lantern Demonstrations on Colour Photography were given by Mr. **SANGER SHEPHERD** (London) and Mr. **J. HALL-EDWARDS** (Birmingham) respectively.

OPHTHALMOLOGY.

WEDNESDAY, JULY 27TH.

This section met under the presidency of Mr. **R. W. DOYNE** (Oxford).

The **PRESIDENT** bade a welcome to the number of ophthalmologists from the United Kingdom, from outlying parts of the empire, from America, France, and Germany, who had signified their intention, in an extensive list of contributions set down for discussion, of aiding the advance of their science and art. He felt the intention already realised in part by the largeness of the gathering before him.

The **PRESIDENT** then called upon Mr. **R. MARCUS GUNN** (London) to open the discussion on

Retro-ocular Neuritis.

Mr. Gunn said that he should include in this category all cases which showed evidence of the optic nerve being impaired by an inflammatory affection behind the papilla. The evidence was mainly clinical and the diagnosis, for a time, might rest solely on the subjective symptoms. But ophthalmoscopic changes came to their aid, either early in the affection by the neuritis invading the papilla or after the lapse of some weeks by the optic disc becoming pale. In exceptional cases only did opportunities occur of examining the affected nerve and then nearly always long after the inflammatory stage had passed away. Put very broadly, he would include all cases in which there was evidence of the optic nerve being inflamed, apart from such as were generally recognised as papillitis. But they were confronted by two questions: (1) How were they to recognise a neuritis when the papilla presented a normal aspect? (2) How were they to differentiate between retro-ocular neuritis involving the papilla and a pure papillitis occurring without evidence of intracranial or other disease calculated to produce it? The reply must be that they were now dealing with a well-recognised clinical group of cases, associated with certain definite subjective symptoms—namely, rapid failure of vision, particularly affecting the macular area, often in one eye only, usually accompanied by pain and tenderness in the orbit. Other characters were impaired pupil reaction to light, an absence of early ophthalmoscopic changes, and a tendency to recovery. Slighter or anomalous forms might occur without these symptoms or conditions as an early descending optic neuritis, from an anterior basal meningitis, would in its earlier course simulate a retro-ocular neuritis. Very similar symptoms occurred in central retinal affections and the differential diagnosis was often difficult during the early stages; the prominent symptom was central visual failure in one eye and at first there were no definite ophthalmoscopic changes. The chief distinguishing feature in the retinal cases was the absence of associated pain; there was also sometimes micropsia, or a positive scotoma, with a history of recent exposure to excessive light. They did not usually get the late pallor of the optic disc, but frequently found œdema and round, pale, yellow spots in the macular region. In the early stages, so long as the diagnosis rested merely on subjective symptoms, retro-ocular neuritis was liable to be confused with functional amblyopia, but a careful examination of the character of the reaction of the pupil to light should always serve to distinguish between them. The reaction was invariably impaired when there was decided amblyopia from neuritis, while it remained normal in cases of functional origin. The amount of amblyopia varied greatly. There might be absolute blindness for a time in the most severe form. On the other hand, occasionally complaint was made of recent visual failure, even though the acuity was $\frac{6}{6}$ In slight cases the test-letters were read slowly, as there seemed to be a mist obscuring their outline; this was particularly evident on comparison with the other eye, for these slight forms were practically always uniocular. A relative colour scotoma at or near the fixation point could always be found in these mild cases. Visual acuity in retro-ocular neuritis was worse in a very bright light and excessive light led to further temporary deterioration, probably from the physiological degeneration so induced in the ill-nourished axis cylinders. Occasionally complaint was made of seeing objects as through a moving haze like that seen on a sunny day near the ground; this might possibly be explained by imperfect insulation of the axis cylinders, from breaking down of their medullary sheaths, a change which was known to occur *early in retro-ocular neuritis.* Besides loss of visual acuity there was a marked diminution in the light sense. A feature of retro-ocular neuritis was the rapidity of the visual failure; this was in contrast with the length of time that a papillitis might exist without the nerve function being affected, and with the usually gradual failure when it did occur in the latter. The visual failure in retro-ocular neuritis very frequently took the form of an absolute central scotoma, surrounded by an area in which the colours red and green were recognised imperfectly or not at all. This visual loss was due undoubtedly to interference with the conducting efficiency of the macular fibres, which from their predominance, both in size and action, and probably by reason of their nourishment by peripheral blood-vessels (Silcox) were liable to degenerations not so easily affecting the general mass of the optic nerve fibres. Pain was a feature of the condition; it was marked in one-third of the cases collected. It was either referred to the back of the eyeball or was elicited on pressing the globe backwards. It sometimes preceded alterations in visual acuity. Lastly, there was much more tendency to recovery, even in severe forms of retro-ocular neuritis, than would be expected, judging from experience of other optic nerve lesions. At the same time there were exceptional cases in which no recovery took place, and others where there was a liability to recurrence so that ultimately the visual result was disappointing. On such important points of etiology as the relation of age and sex to the disorder he had made careful examination in the 350 *cases which he had collected. Etiology was varied and often* obscure. Toxic amblyopias proper, as from tobacco, he excluded from the group under review. In one class he included inflammation communicated to the nerve from neighbouring structures. Cellulitis or periostitis in the orbit accounted for 40 cases; exposure to cold for 27; inflammation secondary to dental abscesses for 17; and sphenoidal sinus disease for 18. In a second class he put local manifestations of general disease; syphilitic disease (gumma), 16; and insular sclerosis, a large group of 51 cases. A third class included neuritic cases of toxic origin, chief among which ranked influenza with 27 cases; next gout, 22; and blood disorders, malaria, constipation, ptomaine poisoning, mental or traumatic shock, &c., 68. Whilst in no less than 55 cases the causation was obscure. In regard to sex and age, on the average of all cases men were slightly more affected than women—37 as against 31 ratio, but in primary cases the females were decidedly predominant, particularly in the decade from 20 to 30 years. In this period alone there were 77 primary cases, of which 48 were in women and 29 were in men. After the age of 40 years men were more affected. The differences, he thought, were accounted for by the greater risks of females during the period of pronounced sexual activity, and of men in later years from shock, gout, and arterial disease.

Mr. **G. A. BERRY** (Edinburgh) laid particular stress on the value of the light-difference sense as an indication of the existence of the disorder, the more so as he was inclined to doubt the certainty of ophthalmoscopic examination as *to the presence or absence of an actual neuritis. He agreed* that the cause of blindness was in the loss of conductivity of nerve fibres and a light-difference defect was the feature of loss of conductivity. Further, the scotomata were homogeneous which was not the case in tobacco amblyopia. The homogeneity indicated an affection of the nerve by pressure and by an equal pressure. He was struck by the relative infrequency of cold among the determining causes as noted by Mr. Gunn; he thought that the proportion should be much larger. In influenza cases he had noticed a coincident affection of other higher sense nerves, as indicated by loss of smell and taste.

Professor **UHTHOFF** (Breslau) showed drawings of sections of the optic nerve from several toxic cases. The histological features in these he held showed that the affection was primarily an interstitial neuritis; there were increase of the nerve septa from proliferation of the fibrous elements and similar changes in the vessel walls, there was no indication of a simple degeneration of the nerve fibres, any changes in them were rather secondary to the interstitial changes than a primary degeneration

Mr C **HIGGENS** (London) commented on the variability in objective symptoms as shown by a case due to a general meningitis in a young lady The right eye was first affected and became blind, the left was similarly lost later, yet at no time were there any ophthalmoscopic evidences Many of his colleagues had expressed the opinion that the blindness was the result of cerebral tumour, but after death no growth could be found but a general meningitis which had involved the optic nerves so that they were converted into fibrous bands from chiasma to globe, scarcely a trace of nerve fibres remained

Mr F **RICHARDSON CROSS** (Bristol) expressed his indebtedness to the valuable work done on this subject by Nettleship and Gunn The disorder was a peculiar one and in some senses illogical He looked upon it as an inflammatory condition of the optic nerve in which no evidence could be seen ophthalmoscopically, if such evidence could be seen he concluded that there was a papillitis and not a retro bulbar condition alone, if there were no objective symptoms it was difficult to say that the disease was present Yet, as Mr Gunn had said, the group was distinguished by clinical symptoms which made it almost certain that there was an affection of the optic nerve between the globe and optic foramen He relied most upon the perimeter for diagnosis for he found in the neuritis of the atrophic order peripheral contraction and absence of scotomata He showed charts of cases demonstrating these points

Professor **OLIVER** (Philadelphia) insisted upon the importance of the light-difference sense and upon perimetric tests of the macular field In his practice he found the use of small coloured pellets as test objects, as suggested by Abney, of greatest value

Dr A **HILL GRIFFITH** (Manchester) believed that a considerable number of cases in rheumatic and gouty people were caused by an inflammation of the fibrous tissue around the optic nerve entrance to the globe of a nature analogous to the episcleritis of the front of the eye He was unable to substantiate Mr Gunn's observation that the pupillary reaction was impaired

Mr E **NETTLESHIP** (London) agreed that the light-difference sense was of the greatest importance, even more so than examination of scotomata He believed with Mr G [illegible] o [illegible] is [illegible] stress had been laid on the influence of cold He did not mean "catching cold" but exposure to low temperatures for many hours

Dr G **VICTOR MILLER** (Stockton-on-Tees) also agreed upon the direct etiological connexion of cold and rheumatism with the affection He described cases which were of this order

Mr **GUNN**, in reply, said that he was fully in agreement with the views expressed as to the influence of cold If his figures—27 in 350—seemed unduly low it was because many which might have been included in the group were complicated by overlapping conditions which seemed more important, this overlapping of possible causes was a matter of much difficulty.

Professor **POULTON**, F R S, read a paper on

Conclusions as to Vision in Birds based upon a Consideration of Mimetic Colour and Pattern in Insects

Whether animals saw as we saw was a matter of greatest interest We could not prove that they saw red as we saw red, but we could go a long way to indicate that there was a similarity in the perception of similar structures A large number of protective devices had been noticed in insects, adaptations which we assumed protected by similitude to indifferent or obnoxious objects If we examined some of these imitative effects we should note a most extraordinary accuracy in the imitation not only in general form but in particular detail, not only in general colour but even to imitation of stripes shades, and minute stippling In the case of the butterflies of North India, which imitated dead leaves, he demonstrated that all those marks on the leaf—holes, discolouration from decay or fungus invasion, exposure of venation—which we recognised as characteristic of a dead leaf were most accurately reproduced on the wings of these insects by the arrangement of the wing scales Such marks as holes were reproduced in exactly the same manner as an artist would indicate them on the canvas and in a varied manner as it was intended to suggest that the hole was seen in the light or against it. All these precautions were for the purpose of deluding the hungry bird to pass over the fly as a worthless and indigestible dead leaf, hence it was reasonable to suppose that the bird saw those details which go to make up the appearance of a dead leaf just as well as we do Similarly he showed the exactitude with which the females of some edible insects imitated non edible or obnoxious insects, both in the general colour, or striping, and minute colour details of the wings, hence we might similarly conclude that birds saw colours with a distinctness equal to our perception of them The paper was illustrated by a large and splendid collection of insects which were subsequently exhibited in the museum, the demonstrations of Professor Poulton were greatly appreciated

Mr M M **MCHARDY** (London) read a paper on

The Maturation and Extraction of Senile Cataract.

He detailed his experiences extending over a period of nearly 20 years of the operation for maturation of cataract by trituration through the cornea after the method of Forster. Many hundred cases had been so treated When he first performed the operation on carefully selected cases he was delighted with its success Later, in applying it generally to unselected cases, he had not obtained such good results, but these imperfections of procedure were speedily removed and after a long and extensive experience he was confirmed in his estimation of the value of the method At first failure attended some 16 to 20 per cent, now only about 2 per cent, damage to the lens necessitating immediate removal occurred at first in 4 per cent, now the accident was almost eliminated, being under 1 per cent Iritis there was now little or none, probably owing to the more efficient precautions taken against it with the use of cocaine and atropine The early liability to loss of vitreous was gone The prime object of the operation was to get rid of the sticky healthy cortical matter of the lens which was often slow to mature by natural processes and which if not completely removed in extraction seriously delayed the restoration of sight Trituration so affected this cortex that it rapidly became converted into a non adhesive substance of bread-and milk consistency which could be wholly evacuated with the nucleus There was practically only one contra indication—the presence of posterior synechiæ indicative of old iritis He preferred a preliminary iridectomy to immediate iridectomy and extraction

Mr **HIGGENS** said he had given up the operation years ago The method might be of service in a few but not in the majority of cases Further, he refrained from doing iridectomy unless some unusual condition compelled The excuse for trituration, in his opinion, had disappeared with the advent of cocaine, since an efficient local anæsthetic had replaced the general anæsthetic or no anæsthetic of former times there was no necessity for hurry and time could be taken to secure the removal of all the lens matter at the *extraction*

Dr **GRIFFITH** said he had performed the operation a good many times in the last 18 years He found no harm resulting therefrom and he was not inclined to abandon the method It was possible that these cases would have done equally well without the preliminary iridectomy and trituration, yet he felt happier in seeing the disappearance of all the clear cortical matter before operating

Dr J **LATHAM THOMPSON** (Cardiff) remarked on a curious occurrence in one of several cases which he had triturated simultaneously In one the lens opacities had completely clear [illegible] to this day The meth [illegible] advent of cocaine and [illegible]

Dr **FRANK A THOMAS** (Swansea) related the benefit derived in a case of dense nuclear opacity which disabled a workman for ten years, one month after he had matured the lens by trituration he extracted the lens and obtained [illegible] vision

Mr **MCHARDY** replied

Dr **KARL A GROSSMANN** (Liverpool) read a paper on

A Case of Astigmatism with Varying Axes.

The subject had eccentrically situated pupils, up and in After correcting his near vision under homatropine and ascertaining the most agreeable axes for the cylinders required—a downward and outward inclination from the vertical—he neutralised the mydriatic with eserine and found that for near vision axes having a rather more horizontal inclination were preferred. He thought the phenomenon was due to an eccentric and unequal suspension of the lens, such as was found in the extreme form in the case of aniridia he had demonstrated before the Association in 1902 and 1903. He had noticed other but less marked cases also associated with eccentric pupils.

Mr. **BERRY** said that cases in which there were slight differences in the axes of astigmatism for near and far vision were not uncommon; the differences depended upon the fact that corneal astigmatism differed over the corneal surface and that with pupils of differing sizes slightly different corneal areas were utilised, so that the summation of corneal and lenticular astigmatism varied.

Professor **G. J. BULL** (Paris) said that cases of eccentric pupils had been shown by Javal to be associated with incipient keratoconus and that with this association variability in the axes of astigmatism was exceedingly frequent.

Dr. **GROSSMANN** replied.

THURSDAY, JULY 28TH.

Dr. **HILL GRIFFITH** opened a discussion on

Intra-ocular Hæmorrhage and Systemic Disease.

At the outset he said he should exclude from consideration all those cases which arose from accident or from optic neuritis, from nephritis, retinitis, or disseminated choroiditis. He wished to consider intraocular hæmorrhages in eyes otherwise free from disease. Such primary or independent hæmorrhages might, like hæmorrhages elsewhere, occur from general conditions—blood changes, anæmia of pernicious types, purpura, scorbutus, and some forms of septic blood conditions, from diseased states of the finer vessels, from back pressure from the heart, and from embolic processes. The hæmorrhages were of most frequent occurrence in the retina, very rarely they might be choroidal, and perhaps, although he had seen none of the class, into the anterior chamber. In most cases of retinal hæmorrhages the retina itself was not changed in appearance apart from the effusion; in some cases there were also localised swelling and exudation probably secondary to the effusion. It had been customary to speak of the former as "retinal hæmorrhage" and of the latter as "hæmorrhagic retinitis" but it was doubtful if there was any real distinction other than that of degree. Intra-ocular hæmorrhages could not be very common, for among 6500 consecutive eye cases of all kinds seen in private there were only 33 cases of the condition, a proportion of 0·5 per cent. In hospital practice some 50 cases were recorded during the same period. These 83 cases might be classed thus: retinal hæmorrhage, 41; "hæmorrhagic retinitis," 20; "subhyaloid," 14; and into the vitreous, eight. In some cases the conditions overlapped. (A tabular list of the cases was shown.) The female sex showed a slightly greater liability than the male—47 as against 36; the preponderance was more marked in the subhyaloid variety—females ten and males four. In the subhyaloid variety the effusion was always about the macula. No difference could be ascertained in the liability of the two eyes. The prognosis both for sight and life was better for this form than for any other. Almost all the cases that were watched recovered with good vision and good health. Under the "vitreous" class were included only those in which there was evidence of a dark-red clot of some size. Many cases of dark floating opacities occurred which were probably of this nature, but for want of certain proof they were better excluded. In all these cases it was likely that the source of the effusion was the retina; in most cases this could be seen to be so. It was possible that the condition might arise from bleeding from the ciliary vessels but he had observed no case of the kind. Of the 61 cases forming the group of "retinal hæmorrhages" and "hæmorrhagic retinitis," a reasonable determining cause could be found for about half of the cases—straining in constipation, coughing in bronchitis or whooping-cough, gout, syphilis, purpura, Bright's disease, organic heart disease in conjunction with hemiplegia or hemianopsia, alcoholism, rheumatism, and the like. He was surprised how few cases were referable to coughing; the strain in "whooping" of children was very severe, as was not infrequently demonstrated by the marked conjunctival ecchymosis witnessed, but he found bleeding only rarely in the retina though he had made it a subject of systematic search. His observation of the association of sclerosis of retinal vessels with liability to small ruptures was in full accord with the extensive researches of Hirschberg, Steadman Bull, Marcus Gunn, and others; it was most marked. He, as well as others, had seen death from apoplexy follow the disregarding of warnings derived from the observation of the condition of the retinal vessels and the presence of minute hæmorrhages. In this connexion he would like to call attention to a point which he had noticed, that the cranial hæmorrhages, whether resulting in paresis or hemianopsia, tended to occur on the same side as the eye which had been noted earlier to contain effusions. Marked as was the liability to hæmorrhages in vessel degeneration it was small compared with the liability in blood changes. Some of the worst and most fatal cases which he had seen were in association with severe and malignant anæmia of varied origins. By way of making a comparative test of the frequency of the condition in hospital patients generally he had made a systematic examination of 500 medical patients whose pupils had been fully dilated. He had found 14 cases in the 500, or 2·8 per cent.—somewhat of a contrast to the 0·5 per cent. amongst his private eye patients.

Mr. **LUCIEN HOWE** (Buffalo, New York) said that he had witnessed hæmorrhages spring from the ciliary body; the effusion passed behind the lens, set up secondary glaucoma, and necessitated the removal of the eye. In general he was opposed to the assumption that all that appeared to be retinal were such; he was convinced that a great proportion should be properly described as choroidal.

Professor **UHTHOFF** showed specimens and drawings of two varieties of cases—an extreme præ-retinal, that which is commonly spoken of as subhyaloid but which he believed to be circumscribed by the retinal limiting membrane; and another of a case of a large post-retinal hæmorrhage which had dissected off the retina from the papilla to within a short distance of the ora serrata on one-half of the globe.

Dr. **RISLEY** (U.S.A.) emphasised the greater liability to hæmorrhages in blood changes over vascular degeneration. He illustrated the generalisation by reference to cases following malarial infection.

Professor **OLIVER** described three cases bearing on the same point. All were in negroes, and in all grave blood changes were demonstrated by blood counts and hæmoglobin estimations. The red corpuscles were reduced as low as 2,000,000, whilst the white were increased to over 200,000 per cubic millimetre, and the hæmoglobin fell to 25 per cent. The general disorders were diagnosed as splenic leucocythæmia and in one as pernicious anæmia. He described the fundus changes noticed and the conditions of the globes after death.

Dr. **G. CARPENTER** (London) was surprised to note the comparative infrequency with which hæmorrhages had been noted in the retina during whooping-cough. Some years ago he had made a systematic examination of a large number of children at the Evelina Hospital and had come to the conclusion that small effusions were by no means infrequent, both in the cough and in other conditions where the children struggled and cried with exceptional vigour. On the other hand, he had not found hæmorrhages in anæmia of children even when associated with enlarged spleens.

Some Practical Remarks on Magnet Operations.

Professor **J. HIRSCHBERG** (Berlin) said that during the last 25 years he had treated upwards of 300 cases of injury to the globe by steel particles by some application of the magnet, principally for the extraction of the intruding fragment. He had also carefully followed the published experiences of other workers and had noticed rules for the practice of the treatment which were somewhat of a puzzle to him. Foremost must always come the symptom of pain. Yet the absence of this indication must not be taken as indicating that no foreign body was present. In not a few such cases he had been able by the use of the sideroscope or by x-ray photography to demonstrate in the clearest manner a considerable fragment when no pain was complained of. He found the sideroscope to be a very suitable instrument provided it was so arranged as to be independent of general influences that so commonly existed in great cities owing to the extensive use of electric currents. He made it a point always to test the reliability of the instrument before and after use on the subject. It had been said that an encapsulated particle in a quiet eye, even though clearly demonstrated and localised, should be left alone. He thought the practice to be bad, as sooner or later the eye was sure to be a total loss. As regarded magnets, he used all [illegible] ciated use of ophthalmoscope and magnet, impossible in the larger forms. On the other hand, cures were effected by the giant form which were not possible with any weaker instrument. As yet the knowledge of the possibilities of the different instruments was not sufficiently distinct. But his inclination was to use the hand form in recent open wounds and to [illegible] giant; this it [illegible] after-regrets [illegible] was too early to come to a clear determination of the prospects attending these operations and to distinguish between the gravity of the varying positions *of the foreign body. In 64 cases 36, or 56 per* cent., retained good permanent vision; of these 23, or two-thirds of the whole, retained very good vision—i.e., from 1 to ½. In 22 cases excision followed the extraction. In conclusion, he lamented the recent decease of McKeown of Belfast to whose work so much of our present success with the magnet was due.

Dr. A. **BARKAN** (San Francisco) remarked on those cases in which a flying fragment of steel traversed the globe from end to end and became imbedded in the retro-orbital tissues. In such cases the careful application of x-ray methods would save a comparatively safe eyeball from further injury. In an experience of 70 cases he was able to corroborate the advantages derivable from the use of the sideroscope, especially the improved form of Hirschberg.

Mr. **MCHARDY** believed that the first step in the proper treatment of these cases was the stereoscopic localisation of the foreign body by x-ray photography and the sideroscope. Only by this proper [illegible] the danger be avoided [illegible] hand magnet in cases [illegible] fragment which had [illegible]

On the Visual Acuity of Savages.

Dr. W. H. R. **RIVERS** (Cambridge) said there was a strong popular idea that the eyesight of savage races was peculiarly keen and penetrating. Wonderful stories had been told of their extraordinary powers. He and others had conducted a very large series of experiments with the purpose of ascertaining the visual acuity of different peoples under similar conditions and tests. The best test was that of the letter E held in varying positions and at different distances. In all cases the examination was made with both eyes and in the open air. Races so diverse as the inhabitants of *Torres Straits, Borneo, Indian aborigines and Brahmins,* Mongols, negroes, and Europeans—civil, military, naval, and children at school—had been tested. It was found that there was very little difference over this wide range. There was a general average of acuity so that the letter E (of the size marked D = 6 of the Snellen test type) could be distinguished in any of its four positions at a distance of 13 metres. 50 per cent. of the subjects examined had two or three times "normal" ($\frac{6}{6}$) vision by this test. When abnormal cases of errors of refraction, which occurred in all races, were excluded the difference between races, savage or civilised, was extremely small. To what then was due the supposed great sight of savages? To a familiarity with their surroundings more than to anything else. The Australian tracker was a marvel in his natural habitat but no better than any country yokel when transported to Melanesia. In short, it was the development of their powers of [illegible] The visual acuity at [illegible] some investigation. I[illegible] 20 to 25 years was reached, then followed a period of constancy until 35 to 45 years when there was a decline. The decline was more rapid and earlier in onset in tropical countries than in home countries; this he thought was due to the earlier onset of lenticular changes which appeared much more frequently in hot climates. Our standard of "normal" vision ($\frac{6}{6}$) was a purely arbitrary one, for many psychological factors came into play in the reading of letters; these were not wholly excluded by the use of such a simple test as the E, for it was found that intelligent people could accurately judge the position of the letter even when its details were wholly blurred, by noting the slight deficiency of density on the open side of the letter.

Remarks on the Diagnosis and Treatment of Glaucoma.

Mr. **BERRY** said that despite the large amount of work which had been done with so much care by so many workers the real nature of glaucoma was still obscure. It was pretty certain that the altered balance in income and outgoing of the circulatory fluids of the eye was a factor and probably more a deficient outgoing than an increase in influx. Then there had been firmly established the part played by the changes in the anterior filtration angle; but with all this it was still impossible to explain the curative action exercised by the operatio[illegible] was a matter of difficulty [illegible] cases of slow progression [illegible] some had thought the distinction extremely difficult, but it had not seemed so to him, since he had been able to use the delicate test for the field of vision permitted by Bjerrum's *screen test which was greatly superior to that of the* ordinary perimeter and could be relied upon in cases where there was no increase in tension discernible. Von Graefe's original directions for iridectomy were most explicit. He insisted on a wide incision, as wide an iridectomy as possible, the tearing away of the iris as close to the ciliary processes as possible, and a slow evacuation of the aqueous. This procedure was based on the mistaken idea that the iris was a secreting surface. Mr. Berry's experience was distinctly in favour of iridectomy. He had little faith in the safety of myotics but his support of the operation was qualified by the method adopted. He preferred a keratome to the narrow-bladed knife; he did not seek to get his incision into the filtration angle. He doubted the possibility of doing this, but supposing it could be done, asked: What advantage would accrue to filtration by creating a cicatrix within the seat of the process? He found no necessity for the old iridectomy of extreme width and followed his narrower incision [illegible] Tyrrell's hook and the removal [illegible] segment of iris. In glaucoma [illegible] the disease but did not result in an improvement of the lost peripheral and central vision such as was a frequent result of operation in the acute *congestive cases.*

Mr. [illegible] experience of the [illegible] invaluable. To him [illegible] between certain low grades of glaucoma simplex and optic atrophy. The difficulty could be often cleared up by the instillation of cocaine. Should it be followed by the appearance of pulsating arteries in the fundus an increase of tension was indicated; also perimetry showed that the tendency to constriction of the field was early marked in atrophy and not in glaucoma. There could be no doubt as to the utility of iridectomy but it was not without danger in old folk in whom the zonula was weakened. In the glaucoma occasionally seen in myopes due, he thought, to a change in the filtration properties of the secreted fluids, the operation of sclerotomy was most successful.

Dr. W. A. **BRAILEY** (London) emphasised the necessity of early diagnosis and interference to obtain the best results, whether myotics or operation was relied upon. He was inclined to give more credit to the use of myotics than he had used to do but it must be begun early and continued without intermission. In cases where drugs appeared of no avail he did not hesitate to operate even though the visual acuity was high [illegible]

Mr. C[illegible] use of a [illegible] incision [illegible] the iris to its root, a point so strongly insisted upon by von Graefe, the introducer of the operation.

Professor **HIRSCHBERG** remarked that it was a life work to obtain a correct view of iridectomy in relation to glaucoma. He had recently published the results of his treatment of 600 cases. He found that the operation was best for the greatest number of patients. In some few cases it resulted in harm to the patient, for in some a malignant glaucoma supervened upon an iridectomy for glaucoma simplex. These disastrous results depended not on the operation but on the peculiar idiosyncrasy of the patient; in the greater number these patients were women. In other cases neither good nor harm resulted from operation; vision gradually diminished. He did not find myotics liable to produce conjunctival irritation as had been suggested; he was careful to see to the frequent sterilisation of fluids used.

Professor **UHTHOFF** summed up his experience of operation in this condition in a simple set of statistics: In 8 per cent. vision was a very little better for the operation;

in 40 per cent. the vision remained unchanged; in 40 per cent. there was no success, vision slowly deteriorated; and in 8 per cent. the patient was rendered the worse.

Mr. BERRY, in reply, said that in his experience the danger of malignant glaucoma referred to by Professor Hirschberg was extremely small; so rare was the condition that it should not deter from operation.

Mr. W. ADAMS FROST (London) read a paper on

Operative Treatment of Myopia.

The removal of the lenses for high myopia was an established surgical procedure. Better vision could be obtained and that without the use of glasses. He did not consider that success had been obtained unless these two results followed extraction. There were not many cases suitable for this form of treatment in England. In selecting cases they had to consider—1. The degree of myopia, which should not be less than 13 D., or one requiring the use of a correcting lens of 15 D. at 10 millimetres from the eye. 2. Visual acuity, and for this as good a test as any was the ability to read at the patient's remote point J. 1. The test was crude, yet it indicated a reasonable integrity of the retinal elements at the macula. 3. The age and general condition of the patient. The operative results were often marvellous; the question at issue was the permanence of the result: Did the procedure increase the liability of these folk to detached retina? They had to remember that patients were in any case liable to this disaster, a liability not known by any trustworthy statistics; that it was usual to operate on the worst eye, just the one most liable to detachment; then they had to estimate the nice point as to how long after operation a detachment occurring was due to the operation. He had seen detachment occur as early as ten weeks and as late as six years after operation. Then, again, they wished to know how long a period must lapse before they could consider the results obtained permanent. One of his cases had remained good for eight and a half years, 12 for five years, and four for three years. His impression was that the operation did enhance the danger of these eyes to detachment, but it was evident that it did not follow in the majority of cases. There was also the question whether after successful operation on one eye the second should be attempted. His opinion was unhesitatingly no; for it was almost impossible, in the unequal myopia of most of these eyes, to obtain equality of vision with the two eyes and, further, the patient lost the ability to read without glasses which the one myopic eye gave him.

Professor LANDOLT (Paris) said that he was aware of much in favour of the operation and he greatly disliked to disparage that which others praised. Yet he could not forget that myopia was only a symptom of a disease associated with grave changes in the uvea. These features tended to enhance the risks of extraction of mature cataractous lenses; how much more serious then in the removal of healthy lenses. In most cases of high myopia one eye was bad and the other was worse: were they to operate on the better eye in the hopes of a better result or to add to the hazards of the operation by choosing the worse eye? He thought that those cases only were suitable where the eyes were of nearly equal degrees of myopia and showed no gross fundus changes.

Mr. S. JOHNSON TAYLOR (Norwich) advocated repeated needling of the lens as less liable to produce alterations of tension than the rapid needling and evacuation of the lens matter.

Mr. FROST considered that the actual details of the operation could not affect the liability to detachment years after operation. He had utilised both the slow and the rapid methods but could find no indication that they influenced the ultimate issue.

Mr. ERNEST CLARKE (London) gave

A Résumé of 20 Years' Treatment of Myopia.

His habit, briefly stated, was to estimate the refraction of patients under 20 years of age with atropine, above that age with homatropine, fully to correct the error found, but not to give cylinders under 1 D. unless they were found to improve vision. He did not allow any reduction for near work. Of 1129 cases, 532 had been under observation for periods averaging four and a half years. Of these 460, with myopia varying from 0·75 D. to 20 D., remained stationary; in 152 cases the visual acuity had improved and in 63 cases the myopia had increased. Of these 63 cases, in 43 the increase was one dioptre or less, in 13 it was from 1 to 2 D., and in three it amounted to 4 D. Practically only 16 cases showed any noticeable increase in the myopia and in these the increase was not serious. He thought that these results tended to confirm the practice of giving full correction; it prevented that excessive convergence which was, he believed, the main factor in maintaining a progress of the disease.

Dr. A. MCGILLIVRAY (Dundee) communicated some observations on

The Temperature of the Cornea and its Relation to Corneal Therapeutics.

He had conducted several experiments on the temperature of the cornea and conjunctiva with the thermo-electric cup which agreed with the published work of Silex. The temperature of the healthy cornea was 10° less than that of the body, it was raised when the lids were closed, and when the eye was covered by pad and bandage it was nearly the same as that of the body. In inflammatory conditions a similar increase was found. These conditions had a marked influence on the growth of micro-organisms. Most of those likely to infect the eye flourished at an optimum temperature, practically that of the body. Hence it followed that covering the eye in inflammatory conditions tended to facilitate the growth of these organisms and also hindered the usual circulatory processes by rendering the eye immobile. He advocated an open treatment of inflammatory affections and the local use of cocaine as tending to reduce vascularity. The danger of desiccation of the corneal epithelium by the use of cocaine did not apply when ointments were used and large loose shades diminished the irritation of light.

THE ANNUAL EXHIBITION.

III.—SANITARY APPLIANCES, DISINFECTANTS, ETC.

The number of disinfectant preparations shown at the Oxford exhibition was decidedly smaller than in previous years though the representation of sanitary appliances in general was well maintained. Messrs. Doulton and Co., the well-known potters of Lambeth, had an interesting exhibit comprising white glazed fire-clay sinks, a white vitreous enamelled rolled-edge bath, and the "Compact" Simplicitas wash-down closet. The strong white earthenware circular-fronted lavatory should also be mentioned. It is fitted with a vulcanite removeable "waste" fixed in the recess, a patent combined hot and cold supply fitting being fixed in the wall and actuated by the foot the temperature of the water being controlled by the left or right movement of a pedal. The Jeyes' Sanitary Compounds Company, Limited, of 64, Cannon-street, London, E.C., exhibited specimens of "cyllin"—formerly sold as creolin and now described as a new coal-tar disinfectant free from carbolic acid or its homologues and containing a new substance discovered in tar. There were preparations for special medical use and for domestic purposes. Bacteriological experiments show that "cyllin" is 11 times more efficient as a germicide than is pure carbolic acid on the bacillus typhosus and 30 times more efficient when tested against the bacillus pestis, while its toxic properties are eight times and its caustic properties ten times less than that of tar acid. An emulsion of "cyllin"—1 in 800 strength—is sufficient, it is stated, to sterilise sputa infected with tubercle bacilli. It has been used in the form of spray in inhalation with some success in tubercle of the lungs. The Berkefeld Filter Company, Limited, of 121, Oxford-street, London, W., exhibited many adaptations of the Berkefeld filter. This filter is known as an effective remover of germs from drinking water and its action is relatively rapid. The Peat Products Company of 71A, Great *Russell-street, London*, W.C., exhibited their interesting "sphagnol" preparations, sphagnol being described as a combination of the antiseptic and emollient vegetable tars and oils obtained in the distillation of peat. It is suitably incorporated with soap. Lints, cotton-wools, absorbent gauze tissue, bandages, surgeons' tow, splint padding, and sheet wadding were the specialties exhibited by the Liverpool Lint Company of Mark-street Mills, Netherfield-road North, Liverpool. A very interesting product is petol (Petol, Limited of 86, Cannon-street, London, E.C.), a base derived from peat and possessing marked antiseptic properties. It has been used in eczema and ringworm with distinct advantage. Petol may be obtained in several forms, amongst which are a salve, suppositories, soaps, and a disinfecting fluid and powder. Mention might appropriately be made in this section of the sanitary mattress of the Marshall

Sanitary Mattress Company, Limited, of 34, Eagle-street, London, W.C. The mattress seems to us fully to justify the adjective "sanitary." It contains over 1000 coppered steel springs, each of which is encased in an upright position *in a separate calico pocket and works independently of* the others. There are thus no friction and no noise and it is difficult to see how such an arrangement could get out of order. Moreover, protected ventilators are placed at each end which allow a free circulation of air which is naturally changed by every movement of the occupant. The same *principle is applied to a pillow, a mattress support,* and a folding bed.

IV.—FOODS AND FOOD PRODUCTS.

Milk and milk products formed a large proportion of the exhibits in this section. Amongst the best known dry-milk preparations is plasmon the nutrient value of which has been thoroughly established in both clinical and dietetic practice. The preparations shown by the International Plasmon, Limited, of 66A, Farringdon-street, London, E.C., and 56, Duke-street, Grosvenor-square, London, W., included plasmon biscuits, diabetic biscuits, plasmon cocoa, beef plasmon, and plasmon arrowroot, the latter being found excellent as a real food in diarrhœa and dysentery without any irritating action upon the bowel. The Aylesbury Company, Limited, of St. Petersburg-place, Bayswater, London, W., showed an excellent series of specially prepared milks—humanised milk, sterilised milk, peptonised milk, cream milk, koumiss, and so forth. The milk employed is obtained from farms periodically inspected by medical and veterinary officers. The "klonol" brand of dried milk shown by Messrs. Irven and Co., of 7 and 8, Union-court, Old Broad-street, London, E.C., represents the entire solid constituents, including the fat, of milk. It is therefore a complete food, but it would be important to determine how far the nutrients are chemically and physiologically modified by the process of manufacture which consists in evaporating the milk rapidly at a high temperature. A similar preparation was that shown by the Galak Milk Products, Limited, of 118, Fenchurch-street, London, E.C., under the name of "galak." In this case, it is asserted that *dietetically* there is no difference between the food value of this dried preparation and fresh milk. Messrs. Fairchild Brothers and Foster of Snow-hill-buildings, London, E.C., presented an instructive exhibit illustrating the preparation of "panopepton" which is made [illegible] in the convalescing stage and answers admirably as a nutrient in disordered nutrition. The exhibit included "peptogenic milk powder," by the use of which milk exhibiting the composition of huma[illegible] from cow's milk; pepsencia, [illegible]ciples of the peptic glands; a[illegible]psin, trypsin, and diastase. Meat preparations in very great variety were shown by several well-known firms. Bovril, Limited, of 152 to 166, Old-street, City-road, London, E.C., showed in association with bovril preparations the excellent food virol, an emulsion of red bone marrow, malt extract, and eggs, forming an efficacious and agreeable substitute for cod-liver oil. Messrs. Armour and Co., Limited, of 46A, Holborn Viaduct, London, E.C., showed digestive ferments, beef-juice, extract of red bone marrow, and various preparations of the powerful hæmostatic principle of adrenal substance, and various glandular extracts in powder *and tablet form.* Liebig's Extract of Meat Company, Limited, of 4, Lloyd's-avenue, London, E.C., exhibited lemco, a highly concentrated beef extract free from fat; and oxo, a fluid beef containing the nourishing as well as the stimulating crystalline substances of beef. Messrs. Brand and Co., Limited, of 11, Little Stanhope-street, Mayfair, London, W., showed specialities for invalids, essences of beef, mutton, veal and chicken, turtle jelly, and soup, meat juices and a nutrient beef powder; and the Peptenzyme Company, of 80, Gloucester-road, South Kensington, London, S.W., exhibited peptenzyme, containing the digestive secretions of the salivary, peptic, pancreatic, hepatic, and splenic glands; protonuclein, said to contain the tissue-building agencies of the lymphoid glands; and trophonine, an agreeable and readily assimilable *liquid food.* Of foods prepared for special purposes may be mentioned those made by Messrs. G. Van Abbott and Sons of Baden-place, Crosby-row, Borough, London, S.E., for sufferers from diabetes, dyspepsia, and obesity, including starchless bread and biscuits, almond bread, and bran gluten. Messrs. Callard and Co. showed an assortment of new foods specially adapted for diabetic patients—e.g., sugarless marmalade, chocolate, beverages, jellies, and starchless breads, biscuits, and cakes. The list may be closed by referring to the preparation known as ovo-lecithin, a pure distearo-glycerophosphate of choline made entirely from the yelk of egg (Billon's Ovo Lecithin Depôt, 16, Water-lane, Great Tower-street, London, E.C.). Ovo-lecithin acts favourably on the processes of *nutrition and hence has proved valuable in chlorosis,* anæmia, and nervous disorders.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

AN ordinary Comitia was held on July 28th, the PRESIDENT, Sir WILLIAM SELBY CHURCH, Bart., K.C.B., being in the chair.

The following gentlemen having passed the requisite examination were admitted as Members of the College: John Frederick Gordon Dill, M.A., M.D. Cantab.; Edward Henry Douty, M.A., M D. Cantab., L.R.C.P. Lond.; Wilfred Stephen Fox, M.A. Cantab., L.R.C.P. Lond.; Ernest Edward Glynn, M.A., M.B. Cantab., L.R.C.P. Lond.; Henry Lawrence McKisack, M.D. R.U.I.; Geoffrey Richard Slade, M.A., M.D. Cantab., L.R.C.P. Lond.; and Thomas Grainger Stewart, M.B. Edin.

Licences to practise physic were granted to 115 gentlemen who had passed the required examination.

Diplomas in Public Health were granted to the following gentlemen: Charles Thomas Blackwell (Major R.A.M.C.), M.D. Durh., L.R C.P. & S. Edin.; Dunstan Brewer, L.R.C.P. Lond., M.R.C.S. Eng.; John Catto, M.B., B.S. Aberd.; Basanta Kumar Chatterjee, L.R.C.P. & S. Edin., L.F.P.S. Glasg.; Stanley Cornell Clapham, L.R.C.P. Lond., M.R.C.S. Eng., M.B., B.S. Durh.; John Matthewson Clements, M.B., B.Ch. R.U.I.; Walter Ernest Llewellyn Davies, L.R.C.P. Lond., M.R.C.S. Eng.; Thomas Stokoe Elliot, L.S.A.; Norman Faichnie (Major R.A.M.C.), M.B., B.S. Durh.; Henry William Grattan (Captain R.A.M.C.), L.R.C.P. Lond., M.R.C.S. Eng.; John William Gromitt, L.R.C.P. Lond., M.R.C.S. Eng.; Hugh Llewelyn Jenkins, M.B., Ch.B. Vict.; John Isaac Pratt, L.R.C.P. Lond., M.R.C.S. Eng., M.B. Toronto; Morgan James Rees, L.R.C.P. Lond., M.R.C.S. Eng., M.B. Lond.; Frank Ernest Rock, L.R.C.P. Lond., M.R.C.S. Eng., M.D. Lond.; Godfrey William Simpson, L.R.C.P. Lond., M.R.C.S. Eng.; Charles Augustus Spooner, L.R.C.P. & S. Edin., L.F.P.S. Glasg.; John Charles Baron Statham (Captain R.A.M.C.), L.R.C.P. Lond., M.R.C.S. Eng.; John Robert Steinhaeuser, L.R.C.P. Lond., M.R.C.S. Eng., M.B. & B.S. Lond.; Robert Lewis Thornley, L.R.C.P. Lond., M.R.C.S. Eng., M.D. Lond.; Philip Vickers, M.B., Ch.B. Edin.; and William McConnel Wanklyn, L.R.C.P. Lond., M.R.C.S. Eng.

The following communications were received:—

1. From the secretary of the Royal College of Surgeons of England reporting certain *proceedings of its Council* on July 14th.

2. From the Lord President of the Privy Council in reply to the College respecting the Parliamentary Bill proposed by the General Medical Council.

3. From Mr. Edmund Gosse, librarian to the House of [illegible] (*a*) the portrait of [illegible]ne in possession of [illegible]l.

4. From Dr. Tyson asking leave to have photographs taken of the portraits of Dr. Edward and Dr. Richard Tyson in the College.—The application was *granted.*

5. From the Board of Education asking the advice of the College as to the formation of a consultative committee to control the general system of school certificates for elementary schools.—The matter was referred to the committee of management.

On the nomination of the President and Council the following appointments were made: Censors: Dr. Thomas Henry Green, Dr. William *Henry Allchin,* Dr. *Norman Moore,* and Dr. *Frederick Taylor. Treasurer:* Sir Dyce Duckworth. Emeritus Registrar: Sir Henry Alfred Pitman. Registrar: Dr. Edward Liveing. Harveian librarian: Dr. Joseph Frank Payne. Assistant registrar: Dr. Oswald Auchinleck Browne.

Elected members of the library committee: Dr. Philip Frank, Dr. Norman Moore, Dr. William Henry Allchin, and Dr. Archibald Edward Garrod. Curators of the museum: Dr. William Howship Dickinson, Dr. Henry Charlton Bastian, Dr. William Cayley, and Dr. John Abercrombie. Finance committee: Dr. George Fielding Blandford, Dr. James Frederick Goodhart, and Sir Isambard Owen. Examiners: Chemistry and chemical physics: Mr. Harold B. Dixon, F.R.S., Mr. John Millar Thomson, F.R.S., Mr. Frederick Daniel Chattaway, Ph.D., D.Sc., Mr. Alexander Mitchell Kellas, F.C.S., and Mr. John Addyman Gardner, F.C.S., F.I.C. Materia medica and pharmacy: Dr. Frederick Willcocks, Dr. Walter Essex Wynter, Dr. Henry Albert Caley, Dr. Francis Whittaker Tunnicliffe, and Dr. James Purves Stewart. Physiology: Dr. Ernest Henry Starling, Dr. Bertram Louis Abrahams, and Dr. Leonard Erskine Hill. Anatomy: Dr. Bertram C. A. Windle, F.R.S., and Dr. Robert Howden. Medical anatomy and principles and practice of medicine: Dr. Samuel Hatch West, Dr. Theodore Dyke Acland, Dr. George Newton Pitt, Dr. Sidney Philip Phillips, Dr. William Pasteur, Dr. William Collier, Dr. Norman Dalton, Dr. Frederick John Smith, Dr. Francis George Penrose, and Dr. John Rose Bradford, F.R.S. Midwifery and diseases peculiar to women: Dr. Alfred Lewis Galabin, Dr. Francis Henry Champneys, Dr. George Ernest Herman, Dr. William Rivers Pollock, and Dr. Edward Malins. Public health: Part I.—Dr. Arthur Pearson Luff. Part II.—Dr. William Heaton Hamer.

The PRESIDENT announced that he had nominated Dr. Frederick Roberts as Harveian orator for 1905. He also gave notice that Dr. F. F. Caiger would deliver the Bradshaw lecture on Nov. 15th instead of on Nov. 3rd as previously announced.

Sir WILLIAM BROADBENT was re-elected a representative on the executive committee of the Imperial Cancer Research Fund.

A report dated July 18th was received from the committee of management. The committee recommended that Felsted School, Felsted, which is already recognised for instruction in chemistry, physics, and practical chemistry, should be now recognised for the teaching of biology. Also, that St. Mary's Hospital, Manchester, should be recognised as a place of instruction in midwifery and gynæcology. The committee reported that it had considered the communication from the General Medical Council containing various resolutions in regard to the teaching and examination of the subjects of the first year of the curriculum and that such resolutions of the General Medical Council do not recommend anything which is not already included in the latest regulations of the Conjoint Board.—The report was adopted.

The quarterly reports of the College Finance Committee, of the Library Committee, and of the curators of the museum were received and adopted. After further routine business had been conducted the PRESIDENT dissolved the Comitia.

THE CONGRESS OF THE SANITARY INSTITUTE.

THE twenty-second Congress of the Sanitary Institute was held at Glasgow from July 25th to 30th under the Presidency of the Right Hon. Lord BLYTHSWOOD, LL.D. The proceedings began on the 25th, with a reception of the members of the Congress in St. Andrew's Hall by the Lord Provost, followed by an inaugural address by the President, Sir RICHARD DOUGLAS POWELL, who took for his subject the Prevention of Consumption. He urged the importance of physical training in schools and dwelt on the necessity for adequate ventilation and cleanliness in dwellings. It was from the poor and crowded populations that the vast death-rate from consumption arose. It was from them that the great bulk of poisoned material emanated; yet measures for the treatment of consumption amongst the poor were as yet hopelessly inadequate. If the death-rate from consumption was to be decreased the municipal authorities throughout the kingdom would have to make great improvements upon the work which had already been done.

On the following day the sectional meetings of the Congress were opened at the University, the University court having granted facilities for this purpose. There was a large attendance of members including delegates from medical and municipal authorities in all parts of the country and many sanitary authorities from the continent.

SANITARY SCIENCE AND PREVENTIVE MEDICINE.

The section of Sanitary Science and Preventive Medicine met under the presidency of Professor J. GLAISTER (Glasgow), who in his opening address dealt with the influence of small-pox hospitals upon neighbouring populations with regard to the spread of the disease. In this connexion he discussed the doctrine of aerial dissemination and contrasted the position of this country with that of Germany with respect to the treatment of small-pox in hospitals. He thought that much of the evidence in support of aerial dissemination was of a very flimsy character. The history of the Glasgow epidemic abundantly showed that the practice of vaccination by giving an immunity against small-pox for a given number of years had caused, when small-pox made its appearance in the city, the development of a large number of mild ambulant cases of the disease which were not discovered and which did not call for medical attendance. That such cases were numerous in Glasgow the evidence of the medical officer of health was clear. Hence, if in the future they expected to deprive small-pox of its great anxiety to communities, then revaccination as practised in Germany must become the law; and before they could determine that aerial dissemination played any part in the propagation of the disease certain critical tests must be employed statistically and otherwise in any epidemic, so that the direct and mediate sources of infection are exhausted before this theory is invoked to account for the circumstances. In Germany the practice of vaccination and revaccination, he said, was universal and if revaccination became compulsory in this country after a comparatively few years it would be possible for small-pox hospitals as such to fall comparatively into disuse.

In the same section Dr. EBENEZER DUNCAN (Glasgow) raised a discussion on the following motion:

> In view of the prevalence of phthisis pulmonalis in the working-class population of Great Britain and of the suffering, pauperism, and death resulting from the dissemination of that disease this Congress recommend the council of the Sanitary Institute to memorialise the Local Government Boards of England and Scotland to allow health authorities to add phthisis pulmonalis to the schedule of notifiable diseases.

Dr. Duncan afterwards agreed to the deletion of the reference to the working classes and to the motion being altered so that the memorial should be to the effect that local authorities should be allowed to make the disease notifiable on such conditions as might be approved by the Local Government Board. In this form the motion was passed by a very large majority.

The other subjects discussed in this section were: The Cause of Small-pox, Inspection of School Children, Malaria and Consumption in the Tropics, Infantile Mortality, and the Sanitary Condition of Vessels.

In dealing with the latter subject Dr. WILLIAM WRIGHT, medical officer to the Glasgow port local authority, advocated that port local authorities should combine in one strenuous effort to take over into their own hands the sanitary supervision of ships and to displace the Board of Trade from a position which up to the present had been nothing short of a sinecure. The officers of the Board of Trade, he contended, had no real knowledge of the sanitary requirements of a ship. The power should therefore be transferred to those who were properly qualified to advise. After further discussion the following motion was adopted:—

> In consideration of the sanitary condition of the mercantile marine this section is of opinion that the sanitary control of ships both during and after construction should be vested in port sanitary authorities and that medical inspectorships for shipping should be created in the staffs of the Local Government Boards of England, Ireland, and Scotland to supervise all suggestions from such port authorities for the consideration and approval of the Board; and the section recommend the council of the Institute to bring the proposition under the notice of the proper authorities.

The work of the other sections, which was of a more technical character, can only be referred to very briefly. The section devoted to Engineering and Architecture met under the presidency of Professor H. ROBINSON. Among the papers read and discussed were those dealing with the Supervisory Control of Water Supplies, Domestic Sanitary Engineering, House Drainage, and Uniform Distribution of Sewage on Filters.

The section devoted to Physics, Chemistry, and Biology also met, Professor FRANK CLOWES (London) presiding. In

his address he referred to two subjects which were of
as a city—namely the best
urity of the atmosphere and of

ago

MUNICIPAL AND OTHER CONFERENCES

A series of conferences of special bodies—municipal representatives, engineers and surveyors to county and other sanitary authorities sanitary inspectors and medical officers of health also took place and an important conference was held on the Hygiene of School Life

At this latter conference Dr A K CHALMERS medical officer of health of Glasgow read a paper with reference to the Examination of School Children in Glasgow His results more or less confirmed the impressions which the anthropometric committee years ago made plain—viz that in towns there were children of corresponding ages who were both smaller in stature and less in weight than children brought up in the country Grading children according to the class of house in which they lived it was found that those who lived in houses of three rooms and upwards had a better physique judging by height and weight, than those living in houses of two rooms, and again that the latter were better developed than those living in houses of one apartment These facts had an important bearing on the measures to be adopted for the physical training of children and established a case for further inquiry both as to food and clothing

At the conference of sanitary inspectors Mr PETER FYFE (Glasgow) read a paper entitled What People Sleep on an outcome of an investigation into the bed making trade As a result of his examination as to the nature of wool flock he found that it was manufactured from a mass of rags the rejected of every class of the population Nothing in the nature of cleansing or disinfection was attempted All went into the machine if sufficiently dry and became transformed into flock The very filthy character of this material was proved by both chemical and bacteriological examination The results obtained in the words of Dr R M Buchanan city bacteriologist indicated an amount of uncleanliness in the form of live potential dirt that was shocking to contemplate when the purpose for which the material was used was considered and revealed a state of matters calling for remedial action At the present time, however sanitary officials were powerless to cope with this widespread evil—one well calculated to bring disease into the closest proximity with the labouring class

At the conference of medical officers of health the subjects dealt with were chiefly those relating to the notification of tuberculosis and the control of small pox contacts After the discussion on the latter subject the following motion was passed —

> That this Congress is
> seriously through the t
> mend the council of th
> take such measures as
> risk of disseminating infection

A conference of women on Hygiene under the presidency of the Duchess of MONTROSE was also held at which such subjects as the physical training of women and the registration of nurses were discussed

The entertainment of the members and their friends received the necessary attention and general satisfaction was expressed at the great success which had attended the whole proceedings of the Congress

ROYAL COLLEGE OF SURGEONS OF ENGLAND

AN ordinary meeting of the Council was held *on July 28th*, the President Mr JOHN TWEEDY being in the chair

The SECRETARY reported the death at the age of 87 years of Sir John Simon K C B past President of the College

The following motion was passed

> The Council
> Simon K C B

Diplomas of Membership were directed to be issued to 115 candidates and in conjunction with the Royal College of Physicians of London diplomas in public health were directed to be issued to 22 successful candidates

The report of the Finance Committee was received and adopted The main items of the report were as follows The gross income of the College for the past year amounted to £26 969, being £547 more than last year From the examinations of the Conjoint Examining Board for England there was a decrease of £315 The incidental
ining Board were £558 more
were chiefly due to letting
om candidates for the Fellowship there was an increase of £165 From the Licence in Dental Surgery there was a decrease of £51 The expenditure amounted to £24 174 or £242 less than in the previous year The expenses of the examination hall were £204 less than last year The museum cost £204 less than last year The extraordinary expenditure was heavy, amounting to £1014, the chief item of which was a premium of £418 for a seven years policy of fire insurance The balance of income over expenditure amounted to £2794 During the year the investments of the College have been increased by £1000 Local Loans 3 per cent stock and £1500 London County 3 per cent stock A sum of £1612 has been expended upon the *redemption of the land tax on* portions of the College property

On the recommendation of the committee of management it was resolved that Felsted School should be recognised as a place for instruction in biology and that St Mary s Hospital, Manchester should be recognised as a place of instruction in midwifery and gynæcology

The following report from the delegates appointed to consider the letter from the Colonial Secretary in reference to diplomas in tropical medicine was received and adopted —

> Royal Colleges that, having
> ary of State for the Colonies
> Royal Colleges on the subject
> we unanimously adopted the
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> 1 That with the p[illegible] sion of the [illegible] School of
> olleges of
> at school
> examina
> tary and
> to Royal
> a similar

Mr R J Godlee was appointed as visitor and the President was authorised to appoint an additional representative if he should think it desirable

A letter was read from Mr Robert L Morant, secretary to the Board of Education forwarding a copy of certain suggestions submitted to the Board by the consultative committee for a system of school certificates stating that the Board is anxious to obtain an expression of the views of the Universities and other bodies interested upon the important issues raised in the suggestions, and requesting that the Board may be favoured not later than Dec 31st 1904 with the outcome of such consideration as may be accorded to the scheme

The letter was referred to a committee to consider and report

MEDICINE AND THE LAW

Byrne v Thorne

THE action brought by a patient against Miss May Thorne for alleged negligence whereby a mattress sponge was left in the plaintiff s abdomen at the conclusion of an operation performed by the defendant was brought to a conclusion now some weeks ago and resulted in a verdict for the plaintiff for £25 damages All our readers know the circumstances of the case and know also that Miss Thorne received from the medical profession a practical testimony of sympathy in the payment of her damages and costs But there are aspects of the case which may be further alluded to

The directions of the learned judge to the jury the questions left to the latter by him the damages which were awarded, and the manner in which the finding was deliv are features in the case which are of general interest from a medico-legal point of view, as the danger of such an occurrence taking place is one to which all surgeons are liable. With regard to this danger a letter from Mr. A. M. Sheild in THE LANCET of June 11th, p. 1684, suggested that mechanical methods may assist the surgeon in ascertaining whether the nurse's or house surgeon's duties have been accurately performed. The suggestion is of importance having regard to the extended responsibility which the recent trial appears to throw upon the surgeon, but Mr. Sheild's views are not shared by many surgeons. All mechanical services are liable to break down, because, after all, they are served by human intelligence. Mr. Justice Bruce told the jury that the point which they had to consider was whether the defendant had been guilty of a want of reasonable care. Skill and care are different things and there was no suggestion of want of skill in this case. The jury had already heard from Mr. H. F. Dickens, K.C., the summary of the law of negligence as applied to medical matters by Chief Justice Erle in Rich *v.* Pierpont,[1] who in summing up the case before him said that the action charged the medical man "with a breach of his legal duty by reason of inattention and negligence and want of proper care and skill" and instructed the jury that if they were of opinion that there had been a "culpable want of attention and care" the medical man would be liable. It was in this judgment that it was laid down that a medical man was not answerable merely because some other practitioner might have shown greater skill and knowledge but that he was bound to have a "competent degree" of both, and that it was not enough in order to make the defendant liable to show that he might have used a greater degree of skill, or even that he might reasonably have employed a higher degree of care. "The question was whether there had been a want of reasonable care and skill to such an extent as to lead to the bad result." In other words, the law in such cases has always been understood to be that the medical man is expected to exercise a reasonable amount of skill and a reasonable amount of care, but that he is not to be held liable to his patient if he did not exercise both or either in the highest conceivable degree, the question what may constitute reasonable skill and reasonable care being for the jury.

In dealing with the facts in the case before him Mr. Justice Bruce dwelt upon the circumstance that although the mistake in counting the sponges was that of the nurse, the counting by the nurse had not been checked before and after the operation by the surgeon, and the absence of this possible precaution evidently weighed with his lordship. The questions left by him to the jury were as follows: (1) Was the defendant guilty of a want of due and reasonable care in regard to the counting or superintending the counting of the sponges? (2) Was the nurse employed by the defendant to assist during the operation? (3) Was the nurse guilty of negligence in counting the sponges? (4) Was the counting of the sponges a vital part of the operation the defendant undertook to perform or to see performed? (5) Was the nurse under the control of the defendant during the operation? With regard to the second and fifth questions it may be observed that they point to a possible liability of the surgeon for the acts of the nurse apart from the performance of his own duties, a liability which has not, so far as we are aware, ever been established. As, however, the first and fourth questions were answered in the affirmative, the second and fifth became superfluous. Mr. Justice Bruce undoubtedly thought that the surgeon ought to make sure for himself, wherever it was reasonably possible for him to do so, not by inquiry but as a matter of personal knowledge, that nothing was left in the patient's body that should be removed before closing the wound, and he guided the jury to an expression of this view in their verdict. The jury considered their verdict for two hours and on their return to court answered all the above questions in the affirmative, adding to their reply to the first a rider that in their opinion the operation was very skilfully performed. With regard to the damages they assessed them at one farthing, a sum which the judge pointed out was inconsistent with answers which attributed negligence to the defendant, and he accordingly declined to accept it from them. The verdict was no doubt, strictly speaking, illogical as if a defendant has caused injury to a plaintiff by negligence he must be answerable for the natural result of his negligence. Such a finding was not, however, unnatural, nor one altogether unusual where a jury of twelve men try a difficult and complicated issue upon which divergent views may reasonably be held. It was, no doubt, the result of a compromise between those who were of opinion that the defendant had not shown any want of reasonable care, such as to involve liability for negligence, and those who thought that more care should have been taken but who still did not think that the surgeon deserved to incur a heavy pecuniary loss. Evidently large damages were not considered necessary by any, for upon the judge refusing to accept the verdict of a farthing the jury reconsidered the matter and raised the amount to £25 only. This may be taken to show that they considered that the supervision of the counting by the surgeon was a practical precaution the absence of which was to be regretted, but that they did not hold it to be one so imperatively called for or so indicated by custom that its omission would justify the exaction of a heavy penalty. The verdict, in short, showed careful and sympathetic consideration of the case and intelligent appreciation of the difficulty of eliminating all error, combined with the hardship of imposing the responsibility even for an avoidable mistake upon the surgeon.

Public Health and Poor Law.

LOCAL GOVERNMENT BOARD.

REPORTS OF INSPECTORS OF THE MEDICAL DEPARTMENT OF THE LOCAL GOVERNMENT BOARD.

On the General Sanitary Circumstances and Administration of the Romford Rural District and on Prevalence of Diphtheria in Certain Localities therein, by Dr. F. ST. GEORGE MIVART.[1]—We are as yet far from possessing any adequate explanation of the local incidence of diphtheria. In any given epidemic it is usually possible to trace opportunities of infection from person to person and sometimes these opportunities are found to have been so numerous that the whole outbreak appears easily to be accounted for. The difficulty, however, remains that the conditions of personal infection which usually seem to be associated with the spread of the disease are common to almost any locality. There is seldom anything in "school influence," unrecognised cases, infected slates, handkerchiefs, drinking cups, and the like which can be considered peculiar to particular neighbourhoods which are frequently and severely attacked by diphtheria; similar opportunities of infection abound in other districts which seem as often to escape epidemics when diphtheria is introduced. It is thus important that the essentially local conditions of diphtheria-infected districts should continue to be studied. The southern part of the Romford rural district, which includes the parishes of Dagenham and Rainham, in recent years has suffered from exceptional prevalence of this disease and in the latter parish, which contains 343 inhabited houses, nearly 200 cases of diphtheria were notified in the course of last year. Opportunities of personal infection were, as usual, numerous and Dr. Mivart deals with the operation of the elementary schools in this direction. He also gives an interesting account of the locality concerned. It forms part of the long stretch of flat country which borders the Thames on the Essex side. Fogs are frequent and the climate is cold, damp, and exposed to east winds. The country is intersected by ditches containing stagnant water and much contaminated by overflows from cesspools and by slop water from the houses. Neither Rainham nor Dagenham is at present sewered. Both have a public water-supply and probably this circumstance increases the nuisance which constantly arises from overflowing cesspools—an evil which the local authority seems to do little to remedy. The most objectionable nuisances in the district, however, are those caused by the great quantities of London manure which are taken by rail to Rainham and Dagenham for use on market gardens and also those due to a very offensive trade, the manufacture of "artificial guano" from fish offal. These conditions occasion an abundance of flies and the possible share of flies in carrying diphtheria through food and in other ways should not be lost sight of The relation of the manure and other nuisances to the prevalence of non diphtheritic sore throat is another matter to which Dr Mivart draws attention It should be observed that the case mortality during the epidemic in 1903 in Rainham was low—less than 3 per cent—and it would be interesting to know how far this may be attributed to the use of diphtheria antitoxin In reviewing the condition of the whole of the Romford rural district Dr Mivart *points to a number of objectionable* and dangerous sanitary conditions to which the responsible local authority should give immediate attention The need for supervision of the cowsheds in the place, which supply the London market, seems to be specially great and the contamination of milk in local dairies by means of flies is another important point on which stress is laid Many of the dwelling houses in Romford seem to be dilapidated and exceptionally damp

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[1] 3 F. and F. 35.

[1] London, Eyre and Spottiswoode, East Harding-street; Edinburgh, Oliver and Boyd; Dublin, E. Ponsonby. Price 4*d.*

On the General Sanitary Circumstances and Administration of the Whittlesey Urban and Rural Districts, by Dr S MONCKTON COPEMAN[2]—The village and urban district of Whittlesey, with a population of just below 4000, is situated on what was formerly an island in the fen country about six miles south east of Peterborough It is mainly a collection of small houses and many of the inhabitants are brickmakers Dr Copeman points out a large number of insanitary conditions several of which could be remedied without much expense by a satisfactory local authority The most pressing need of the village is a wholesome water supply and apparently this could be secured at a comparatively small cost either by extension of the Peterborough mains or from the Wisbech waterworks The district however, has a local Act by which no greater rate than 3*s* 6*d* in the pound can be raised in any one year without the sanction of a town's meeting and the inhabitants have hitherto invariably refused to sanction any additional rating for water or for other sanitary purposes It is to be hoped that this attitude will be changed now that Dr Copeman has shown the feasibility of a satisfactory scheme of water supply which is needed also for certain villages in the adjoining rural district

VITAL STATISTICS

HEALTH OF ENGLISH TOWNS

IN 76 of the largest English towns 8748 births and 4793 deaths were registered during the week ending July 30th The annual rate of mortality in these towns, which had been 13 5, 13 7, and 14 1 per 1000 in the three preceding weeks further rose last week to 16 4 per 1000 In London the death rate was 16 0 per 1000, while it averaged 16 5 per 1000 in the 75 other large towns The lowest death-rates in these towns were 2 6 in Smethwick, 4 5 in Hornsey, 7 0 in King's Norton 7 4 in Northampton, 8 0 in Rotherham, and 8 7 in Croydon and in Handsworth, Staffs, while the highest rates were 22 1 in West Ham, 22 6 in Birmingham, 24 7 in Rhondda, 25 8 in Stockport 27·1 in St Helens, and 29 8 in Liverpool The 4793 deaths in these towns last week included 1255 which were referred to the principal infectious diseases, against 500 506 and 792 in the three preceding weeks, of these 1255 deaths, 947 resulted from diarrhœa, 156 from measles, 57 from whooping cough 35 from diphtheria, 33 from scarlet fever, 22 from "fever (principally enteric), and five from small pox No death from any of these diseases was registered last week in Hornsey, Hastings Bournemouth, King's Norton, Smethwick or West Hartlepool, while the highest death rates from the principal infectious diseases were recorded in West Ham, Leyton, Birmingham, Aston Manor, Nottingham Stockport, Liverpool, Bootle, and St Helens The greatest proportional mortality from measles occurred in Hanley, Grimsby, Birkenhead, St Helens Huddersfield, and Hull, from scarlet fever in Great Yarmouth and Barrow in Furness, from whooping cough in Burton on Trent and St Helens, from diphtheria in Reading, and from diarrhœa in Tottenham West Ham Leyton, Birmingham, Aston Manor, Nottingham, Stockport Liverpool and Bootle The mortality from "fever' showed no marked excess in any of the large towns *Of the five fatal cases of small pox* registered in these towns last week, two belonged to London and one each to Warrington, Manchester, and Newcastle-upon-Tyne The number of small-pox patients in the Metropolitan Asylums hospitals at the end of last week was 46, against 71, 62, and 51 at the end of the three preceding weeks, seven new cases were admitted during the week, against ten, seven, and six in the three preceding weeks The number of scarlet fever cases in these hospitals and in the London Fever Hospital, which had been 1685, 1698, and 1754 *on the three* preceding Saturdays, had increased to 1784 on Saturday last, July 30th, 243 new cases were admitted during the week, against 269, 229, and 234 in the three preceding weeks The deaths in London referred to pneumonia and diseases of the respiratory system, which had been 135, 155, and 120 in the three preceding weeks, fell again [illegible] ght above the number in [illegible] r The causes of 50, or 1 [illegible] in the 76 towns *last week were not certified either by a registered medical* practitioner or by a coroner All the causes of death were duly certified in West Ham Bristol, Leicester, Nottingham, Salford, Leeds Newcastle upon Tyne, and in 45 other smaller towns, while the largest proportions of uncertified deaths were registered in Birmingham, Sheffield, Liverpool, Bootle, and Manchester

HEALTH OF SCOTCH TOWNS

The annual rate of mortality in eight of the principal Scotch towns, which had been 15 8, 14 8 and 15 7 per 1000 in the three preceding weeks declined to 14 1 per 1000 during the week ending July 30th, and was 2 3 per 1000 below the mean rate during the same period in the 76 large English towns The rates in the eight Scotch towns ranged from 9 0 in Greenock and 10 8 in Aberdeen to 16 6 in Dundee and 19 9 in Paisley The 466 deaths in these towns included 24 from diarrhœa, 19 from whooping cough, seven from measles four from "fever" two from scarlet fever, and two from diphtheria In all, 58 deaths resulted from these principal infectious diseases last week, against 64, 53 and 68 in the three preceding weeks These deaths were equal to an annual rate of 1 8 per 1000, which was 2 5 per 1000 below the mean rate last week from the same diseases in the 76 large English towns The fatal cases of diarrhœa, which had been 20, 19 and 23 in the three preceding weeks, were 24 last week 13 occurred in Glasgow, three in Dundee, and three in Aberdeen The deaths from whooping cough, which had been 24, 21, and 22 in the three preceding weeks, fell to 19 last week, and included 12 in Glasgow and three in Edinburgh The fatal cases of measles, which had been six and 12 in the two preceding weeks, fell last week to seven, of which four occurred in Edinburgh The deaths from scarlet fever, which had been two and three in the two preceding weeks, were two last week These two deaths were registered in Glasgow The fatal cases of "fever,' which had been three in each of the two preceding weeks, were four last week, of which two occurred in Dundee The deaths referred to diseases of the respiratory organs in these towns, which had been 88, 49 and 75 in the three preceding weeks, fell last week to 55 and were 44 below the number in the corresponding period of last year The causes of 13, or more than 3 per cent, of the deaths in these eight towns last week were not certified

HEALTH OF DUBLIN.

The death rate in Dublin, which had been 17 9, 19 3, and 17 5 per 1000 in the three preceding weeks, rose again to 17 9 per 1000 during the week ending July 30th During the past four weeks the death rate has averaged 18 2 per 1000, the rates during the same period being 14 2 in *London and* 14 4 in Edinburgh The 130 deaths of persons belonging to Dublin registered during the week under notice showed an increase of three over the number in the preceding week and included 12 which were referred to the principal infectious diseases, against ten, 18, and 15 in the three preceding weeks, of these, four resulted from measles, four from diarrhœa, two from whooping cough, one from "fever," and one from diphtheria, but not any from small pox or scarlet fever The 12 deaths were equal to an annual rate of 1 7 per 1000, the death rates last week from the principal infectious diseases being 4 1 in London and 1 6 in Edinburgh The fatal cases of measles, which had been two, ten, and five in the three preceding weeks, declined again last week to four. The deaths from diarrhœa, which had been five, two, and five in the three preceding weeks, declined to four last week. The fatal cases of whooping-cough, which had been three in each of the two preceding weeks, were again two last week. There was one death from "fever," as against two in the preceding week. The 130 deaths in Dublin last week included 35 among children under one year of age and 18 among persons aged 60 years and upwards; the deaths of infants showed a considerable increase, while those of elderly persons were fewer than in any week during the present year. Six inquest cases and four deaths from violence were registered; and 50, or over 38 per cent., of the deaths occurred in public institutions. The causes of seven, or nearly 6 per cent., of the deaths registered in Dublin last week were not certified.

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[2] Ibid, price 4*d*

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Fleet Surgeon R. Miller to the *Terror* on recommissioning and for Bermuda Yard. Surgeons: J. C. Durston and G. E. Duncan to the *President* for hospital course.

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel G. T. Trewman, half-pay, retires on retired pay (dated August 3rd, 1904). Major R. H. Clement retires on retired pay (dated August 3rd, 1904). Major G. B. Russell retires on retired pay (dated August 3rd, 1904). Major L. R. Colledge retires on retired pay (dated August 3rd, 1904). Major S. Butterworth retires on retired pay (dated August 3rd, 1904). Captain H. H. Norman is placed on temporary half-pay on account of ill-health (dated July 25th, 1904).

IMPERIAL YEOMANRY.

Oxfordshire (Queen's Own Oxfordshire Hussars): Archibald Henry Hogarth to be Surgeon-Lieutenant (dated July 30th, 1904).

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Captain W. A. Atkinson to be Surgeon-Major (dated July 23rd, 1904). Surgeon-Lieutenant J. R. Williams to be Surgeon-Captain (dated July 20th, 1904). Captain A. R. Badger, Worcester and Warwick Bearer Company, Royal Army Medical Corps Volunteers, to be Surgeon-Captain (dated August 3rd, 1904).

VOLUNTEER CORPS.

Royal Garrison Artillery (Volunteers): 1st Cornwall (Duke of Cornwall's): Edwyn Graved Andrew to be Surgeon-Lieutenant (dated July 30th, 1904). 2nd Hampshire: Surgeon-Lieutenant-Colonel G. G. Sparrow resigns his commission and is granted the honorary rank of Surgeon-Colonel, with permission to wear the prescribed uniform (dated July 30th, 1904).

Rifle: 3rd Volunteer Battalion the Devonshire Regiment: Surgeon-Lieutenant E. R. Tweed to be Surgeon-Captain (dated May 15th, 1904). 5th (The Hay Tor) Volunteer Battalion the Devonshire Regiment: Surgeon-Major E. Haydon resigns his commission and is granted the honorary rank of Surgeon-Lieutenant-Colonel, with permission to wear the prescribed uniform (dated July 30th, 1904). 1st Volunteer Battalion the Suffolk Regiment: Brigade-Surgeon-Lieutenant-Colonel G. S. Elliston is seconded whilst holding the appointment of Senior Medical Officer of the Harwich Volunteer Infantry Brigade (dated July 30th, 1904). 2nd Volunteer Battalion the Worcestershire Regiment: Surgeon-Lieutenant H. B. Emerson resigns his commission (dated July 30th, 1904). 1st Volunteer Battalion the Duke of Cornwall's Light Infantry: Surgeon-Lieutenant F. Chown to be Surgeon-Captain (dated July 30th, 1904). 1st Volunteer Battalion the King's (Shropshire Light Infantry): Surgeon-Major F. K. Pigott to be Surgeon-Lieutenant-Colonel (dated July 30th, 1904). 1st Herefordshire: Surgeon-Major J. W. Hinings resigns his commission and is granted the honorary rank of Surgeon-Lieutenant-Colonel, with permission to wear the prescribed uniform (dated July 30th, 1904).

DEATHS IN THE SERVICES.

Staff Surgeon Henry Scanlan, R.N. (retired), at Kerswell, Broadclyst, Devonshire, on July 31st, aged 55 years. He entered the Royal Navy as surgeon in 1872, became staff surgeon in 1884, and retired in 1885. He served with the Royal Marine Battalion at Suakin during the operations in the Eastern Sudan in 1884-85. (Egyptian medal and clasp and Khedive's bronze star.)

THE NEW ARMY SCHEME.

Mr. Arnold-Forster's new army scheme will probably come before the House of Commons for discussion again on Monday next, when it may be hoped that some further information will be afforded and some additional light will be thrown upon the exact nature and extent of the new proposals.

MALTA FEVER.

We learn from India that a special commission is investigating Malta fever, the occurrence of which in India is becoming more recognised. A special committee is also investigating anti-typhoid inoculation.

FIFTY YEARS' MEDICAL SERVICES TO THE RUSSIAN FLEET.

The 20th of July was the fiftieth anniversary of Dr. V. S. Kudrina's official services as Chief Medical Inspector to the Russian Fleet and the occasion was taken by the Military Medical Academy to present him with a congratulatory address.

THE WAR IN THE FAR EAST.

Denatured spirit is finding a use at the seat of war. The chief Russian Military Medical Council has acquired a number of spirit lamps for the field hospitals fitted with special burners and giving a clear light. A parcel of these lamps has already been sent to the Manchurian army.

Lieutenant-General Linivitch says that he visited on July 24th the Nijnigorod and the Nijninovgorod hospitals at Chabarovsk in the Far East and found everything there a pattern of order and comfort. The hospitals are luxuriously furnished. He feels it his duty to thank the two towns on behalf of the army under his orders and to convey to the towns interested the expression of satisfaction their generosity has caused the soldiers. He gives unstinted praise to the staff, especially the two chief medical officers, Dr. Kossereff and Dr. Oschmana. General Kuropatkin, likewise, writes in praise of the Red Cross arrangements, especially mentioning the efficiency of the hospital furnished by the Kharkoff Zemstvo (local council) which he had personally visited between Lyao-yang and Saimatze.

The members of the St. Petersburg Society of Dental Doctors are arranging with their provincial colleagues with the object of opening at their common expense dental consulting and operating-rooms for the army in Kharbin, Mukden, Lyao-yang and other depôts of the Manchurian army.

The situation in the Far East changes from day to day, and we may at any moment hear of some great and striking success on one side or the other which may alter the aspect of the war. There has been heavy fighting south of Haicheng and at the present time the Japanese field forces are making a great and general advance; three of their armies are engaged and the Russians are probably hard pressed, while the position at Port Arthur has entered upon a very acute and perhaps final stage. As regards the general sweeping movement of the Japanese armies almost everything now depends on the success or failure of the first army in closing the net from the north-east. General Kuropatkin's position must be causing keen anxiety at St. Petersburg at the present time. The first official announcement from Tokio regarding the siege operations was made at the end of last month when the general staff announced that five officers had been killed and 41 wounded in the then recent fighting around Port Arthur, but the losses in men were not stated. As far as can be gathered from non-official reports all the public buildings inside Port Arthur are used as hospitals. The sick and wounded are stated to be well cared for by volunteer nurses. The wounds inflicted by the Japanese rifle fire are described as not dangerous except in vital spots. Hundreds of men after being badly wounded have quickly recovered and are now back in the firing line. The latest reports of the progress of the siege are not only very meagre but contradictory and untrustworthy. The Russian casualties at the battle of Tashichao are estimated by General Oku at 2000, while those of the Japanese in the entire engagement are put down at 1000, but little reliance can, as a rule, be placed in estimates formed in this way during a war. It is stated that there is much dissatisfaction in Russia at the relative absence of information as to the extent of the losses According to a war correspondent of the *Standard* a foreign merchant has arrived at Chifu who left Kharbin on July 22nd last and reports that during the last five weeks a very large number of Russian troops had arrived and were still arriving there They were well provisioned, grain was plentiful, the Russians paying good prices for it to the Chinese There were many wounded at Kharbin but there are excellent accommodation for them and ample medical comforts The Japanese prisoners have been sent to Tomsk where they are treated excellently The railway is working well, though slowly.

Correspondence.

"Audi alteram partem."

LAYMEN AND ELECTRICAL TREATMENT.

To the Editors of THE LANCET.

SIRS,—There are at least two sides to the question raised by "Fair Play" in THE LANCET of July 23rd. Amongst the reasons which lead many members of the profession to send their patients to laymen for treatment by electricity the following would, I think, occupy an important place. First, the expense. There are very few patients who care to pay a guinea, or even half a guinea, per *seance* for electrical treatment, possibly of many weeks' duration, or to pay from three to ten guineas for a skiagram Secondly, a medical man who thinks electrical treatment may be useful or at least worth trying in a particular case perhaps after he has exhausted other plans of treatment would often shrink from having his diagnosis and ideas of treatment overhauled by another practitioner

It is surely absurd to contend that there can be anything harmful to a patient in getting a skilled layman to skiagraph him for diagnostic purposes, although no doubt special anatomical knowledge is occasionally needful to interpret what is seen Again, "Fair Play" can hardly think that it is difficult for any skilled electrician who has an elementary knowledge of anatomy to apply galvanism or even high-frequency or static currents in a case, say, of sciatica, or to use the slowly interrupted faradic current in one of atony of the abdominal muscles I certainly think we should be careful to avoid sending our patients to the class of people who pose as "healers" or who prefer to act apart from medical men As a possible compromise I would suggest that the medical men who practise entirely in electro-therapeutics might employ nurses or other skilled assistants who could work under their supervision at a much smaller fee than they themselves are obliged to charge

I am, Sirs, yours faithfully,
E STANLEY SMITH
Wimpole street, W, July 26th, 1904

To the Editors of THE LANCET.

SIRS,—Apropos of the remarks made by "Fair Play" it is my firm belief that many men taking up electro therapeutics will when fully qualified refuse to register They will do so because if unregistered they will be assured of the support of their registered friends and can at the same time compete on an equal footing with the lay institutes in the matter of advertising, &c It is my experience that the generality of practitioners look upon electrical treatment as bordering on quackery They do so because the bulk of the work is done by laymen who, by business like methods, attract the public and force the medical man's hand

I am, Sirs, yours faithfully,
H VALENTINE KNAGGS
Camden road, N W, July 26th, 1904

THE SCOTTISH POOR-LAW MEDICAL SERVICE

To the Editors of THE LANCET.

SIRS,—While thanking you for your very kind congratulations on the successful settlement of my actions against the parish council of Durness I desire, with your permission, to put on record my high appreciation of the able and resolute manner in which the Medical Defence Union of London and its solicitors (Mr Hempson, London, and his Edinburgh agents, Messrs. Inglis, Orr, and Bruce, W S) have conducted this case to s[illegible] It is, I believe, [illegible] the passing of the [illegible] which established parish councils in place of the parochial boards and I trust that it may tend to hasten much needed legislation which will amend the aforesaid Act by giving to the parochial medical officers of Scotland a right of appeal against capricious or unjust dismissal by their parish councils, so placing the Scottish Poor law medical officers on a similar footing with their professional brethren in England and in Ireland I also desire to express my thanks to Mr W. L Muir, the energetic secretary of the Scottish Poor-law Medical Officers' Association, who writes to me as follows "You are to be congratulated on the result and the Medical Defence Union (London), of which you most fortunately are a member, are entitled to the thanks of the whole Scottish Poor-law medical staff"

I am, Sirs, yours faithfully,
JAMES F D. MACARA, M B, C M, Glasg.
Durness, Sutherlandshire, N B, July 26th, 1904.

LIVERPOOL

(FROM OUR OWN CORRESPONDENT.)

The University of Liverpool. the King's Visit to Liverpool.

ON the occasion of the visit of the King and Queen to Liverpool on July 19th Dr A W W Dale, the Vice-Chancellor of the University of Liverpool, was presented to His Majesty by the Earl of Derby and read a loyal address from the University, in which the gratitude of the governing body was expressed at the royal charter which had been granted to it The King, in reply, said that it was a source of sincere gratification to him to have been able to grant the charter to the University Though the period which had elapsed since the granting of the charter had been but short the efforts made for the advancement of knowledge by the authorities were deserving of the highest eulogy and would ultimately, he did not doubt, be rewarded by results worthy of so great a city

Death from Anthrax by Inhalation

A labourer at the Mersey Docks and Harbour Board's wool warehouse in Great Howard street, aged 62 years, returned home on July 19th and his wife noticed a small pimple on the left side of his lower lip which she considered to be a "blind boil" On the following day the man induced a barber who was shaving him to cut the point of the pimple. Later in the day the barber gave him some ointment to apply to it On the 21st the sufferer's face was swollen, but he went to his work nevertheless and experienced no pain. In the afternoon of the same day the keeper of the wool warehouse, *though not suspecting the ailment, induced the* sufferer to go to the David Lewis Northern Hospital where it was found that he was suffering from anthrax The face and the neck continued to swell and he died on the 24th An inquest was held by the city coroner and a verdict of "Death from anthrax" was recorded Dr. White, one of the house surgeons at the hospital, deposed *that the surgeons recognised* that the deceased was suffering from anthrax when he was admitted There was an ulcer on the face and the face was considerably swollen. The anthrax organism was found at the part where the pimple had been As the result of an operation the swelling was entirely removed and on the next morning the deceased was better On the night of the 23rd, however, he became rapidly worse and died on the following morning after experiencing acute abdominal pain. A post-mortem examination revealed a number of ulcers in the stomach which probably indicated internal anthrax The stomach was at the time under microscopical examination, but he had no doubt whatever that death was due to anthrax Mr R E. Graves, H M inspector of factories, who was present at the inquest, stated that this was the first fatal case from the inhalation of the germs of anthrax in Liverpool and he looked upon the stomach ulceration as important Mr. Graves said that Dr T M Legge of the Home Office, who was in court, had informed him that he had brought with him some serum which had been successfully used in other countries by way of injection against this disease and he was endeavouring to get it adopted by the medical profession in this country. It had had the effect of reducing the number of fatal cases. Dr. Legge intended to visit some of the hospitals in reference to the use of the serum.

The Renewal of the Lease of the Liverpool Medical Institution.

The question of the renewal of the lease of the Medical Institution (for which the estate committee of the corporation required £817) which had been a source of much anxiety to the trustees and council of the society for several months has at length been satisfactorily arranged. In 1880, when 40 years of the lease had expired, the appointment of new trustees to the institution owing to deaths had become necessary, and the council of the society applied to the corporation for a renewal of the lease free of fine as before. The application was granted at a peppercorn rent. However, a few weeks later the council of the society was informed by the town clerk for the time being that he considered it technically necessary to obtain the consent of the Lords of the Treasury prior to issuing the new lease, as it was proposed to grant it without fine. The Lords of the Treasury replied that they did not feel justified in giving their consent to the application as the lease would not have run out until 1915 and that no grievance could arise until then. In the meanwhile no action need be taken. On April 10th, 1902, the trustees of the society waited upon the estate committee of the city council, and in reply to an application for a renewal of the lease without fine they received the astounding intimation that a fine of £817 4*s.* would be required. This action of the estate committee was difficult to reconcile with the attitude of the corporation in 1881. A second deputation of the society waited on the estate committee later but without satisfactory result. Mr. T. H. Bickerton, the late treasurer of the institution and one of the vice-presidents, took the matter up warmly and read a most elaborate paper before the society on the History of the Liverpool Medical Institution in Special Relation to the Question of the Lease, in which he pointed out the admirable work which the society performed in the spread of specialised knowledge calculated to alleviate human suffering and to benefit the community at large. To his exertions and the sympathetic attitude of the town clerk the institution is indebted for the reduction of the demand made from £817, for the renewal of the lease for 75 years, to the nominal fine of ten guineas.

University of Liverpool: Admission of Graduates: Appointment to Fellowships.

On July 26th the third ceremony of admission to degrees took place in the Arts Theatre of the University. Amongst graduates of other faculties 16 gentlemen were admitted to medical and surgical degrees by the Vice-Chancellor, Principal Dale. Including admissions made on that day the Vice-Chancellor stated that of their Victoria graduates those who had actually taken advantage of the offer to become graduates of Liverpool the number was 342, of whom 307 had presented themselves in person, while 35 resided abroad and were admitted by special concession in their absence. What the Senate was trying to do was, so to speak, to build into the new fabric the stones belonging to the old one. The Gee fellowship on human anatomy was awarded to Dr. Hubert Gordon Thompson, the Johnston colonial fellowship to Dr. H. E. Roaf, the Ethel Boyce fellowship in gynæcology to Mr. E. Emrys Roberts, the Holt fellowship in pathology to Mr. H. Pierpoint, the Thelwall Thomas fellowship in surgical pathology to Dr. E. Cleaton Roberts, and the Stopford-Taylor fellowship in dermatological research to Dr. F. P. Wilson. Mr. P. Hick and Mr. F. R. Tickle were respectively awarded the Derby exhibition and the senior Lyon Jones scholarship.

Bequests to Liverpool Charities.

The late Miss Anne M. B. Hornby of Wavertree has bequeathed £500 to the Children's Infirmary and £100 each to the Woolton Convalescent Institution and the Nurses' Home, Dover-street.

August 1st.

WALES AND WESTERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENTS.)

Pauperism in South Wales.

STATISTICS relating to the amount and cost of pauperism in South Wales and Monmouthshire have recently been issued by Mr. F. T. Bircham, the Poor-law inspector of the Local Government Board. The population of this district in 1901 was 1,546,100, an increase of 221,054 over that recorded in 1891. In the whole of England and Wales 2·2 per cent. of the population were in receipt of parish relief on Lady Day, 1904, while on the same date in the six counties of South Wales and in Monmouthshire 2·7 per cent. of the population were being relieved, compared with 2·6 per cent. in March, 1903, and 2·5 per cent. in 1894. The lowest rate of pauperism was in the Bridgend Union—1·5 per cent.—and the highest in the Carmarthen Union—3·8 per cent. The cost of maintaining the indoor and outdoor paupers in the Bridgend Union was equal to 2*s.* 5¼*d.* per head of the population and in the Carmarthen Union 6*s.* 6¼*d.* In the Pontypridd Union the cost was 2*s.* 7¼*d.*, in Cardiff 3*s.* 9¾*d.*, and in Merthyr Tydvil 4*s.* 8*d.*

Public Abattoir for Dartmouth (Devon).

The Local Government Board inspector (Mr. E. A. S. Fawcett) recently held an inquiry into the application of the Dartmouth town council for permission to borrow £1050 to erect a public abattoir, about a mile from the town, on the summit of a hill. There was no objection raised to the proposal.

The Water-supply of Ilfracombe.

The new water-supply, which has been obtained for Ilfracombe from Exmoor at a cost of £55,000, was formally opened on July 27th by Lord Ebrington, the Lord-Lieutenant of Devonshire, in the presence of a large gathering.

The Winsley Sanatorium.

At the meeting of the Bristol city council, held on July 26th, it was decided, in consequence of some conditions laid down by the Local Government Board, to extend the period of time which the council will subscribe £1300 from one year to five years. The council, in addition, has also given £5000 towards the construction of the sanatorium. It is hoped that the institution will be opened in November and the Bath city council at its meeting on July 26th, on the proposition of the mayor, passed a motion asking the executive committee of the sanatorium to make special efforts to obtain the gracious consent of King Edward to perform the opening ceremony.

Celluloid Bound Bibles.

One of the Cardiff magistrates has provided for the use of the borough police-courts copies of the Bible bound in celluloid covers which can be readily cleaned. It is very rarely that a witness in the South Wales police-courts asks to have the Scotch form of oath administered.

The Three Counties Asylum, Carmarthen.

Upon their last visit to the Carmarthen Asylum the Lunacy Commissioners reported that there were 21 men and 13 women in the institution in excess of the proper numbers and suggested certain alterations in the old isolation hospital to make it in a fit condition for the permanent occupation of an increased number of patients. A dispute has been going on for many years as to the proportions of the contributions to be made to the asylum committee by the county councils of Cardigan, Carmarthen, and Pembroke and it was decided by the committee of visitors on July 28th that no matter entailing a large expenditure of money should be considered until the matters in dispute have been settled.

August 1st.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Dispensary Medical Officers.

THE salaries of the Poor-law dispensary medical officers in Ireland are notoriously insufficient, but the trouble caused by the careless issue of tickets, through which the medical officers are obliged to attend patients gratis under pain of dismissal, ranks in some districts as chief among the grievances. The "red ticket" is the chief cause of trouble, as the medical officer is expected to regard this ticket as an urgent command to visit a poor patient at his or her home. A recent example was brought before the Local Government Board and has been transmitted to the guardians of the Monaghan union. Mr. M. Halpenny, medical officer of Scotstown dispensary district in that union, requested that a "red ticket" forwarded to him should be cancelled on the ground that the woman whom he was thereby forced to attend was the wife of a rated occupier of a farm of 25 statute acres for which the farmer pays rent and taxes and possesses a vote. The woman was described on the "red ticket" as a labourer's wife The guardians at their meeting on June 27th refused to cancel it; hence the action of the Local Government Board in transmitting the medical officer's letter to them They have again postponed the matter. It would seem a gross case

The late Dr John Joseph Cranny.

The death of Dr John J Cranny of 17, Merrion square, Dublin, is much to be regretted He was widely known and very popular in the city, where his death at the comparatively early age of 59 years is keenly felt by the many friends who knew him and recognised his high qualities as a philanthropist and physician. He was the owner of considerable property in the Pembroke township where he represented for some years a district at the council board. Dr Cranny, who was a most charitable and retiring man, was an M D. of the University of Dublin, Fellow and member of council of the Royal College of Surgeons in Ireland, surgeon to Jervis-street Hospital and to the Orthopædic Hospital, and consulting physician to the Royal Hospital for Incurables

An Honorary Degree for Sir John W Moore

On July 28th the degree D Sc *honoris causâ* of the University of Oxford was conferred on Sir John William Moore, late President of the Royal College of Physicians of Ireland Professor Love, in presenting him to Convocation, said that the University welcomed in him a representative of the sister University of Dublin

The Belfast Hospital for Skin Diseases

At the annual meeting of the supporters of this hospital held on July 30th it was reported that during the year 926 patients had been treated and that the balance to the credit of the institution was £271 15*s* 10*d* The necessity of an improved Finsen lupus lamp was emphasised.

Ireland's Declining Population

The returns just issued of births, marriages, and deaths in Ireland for the ten years 1891–1900 are very unsatisfactory The population has diminished from 4,680,376 to 4,468,501—that is, there was nearly a quarter of a million fewer people in Ireland in 1900 than in 1891. In 60 years the population has declined from over eight millions to less than four and a half The tendency to a decline in the birth rate, which has become so marked in England, has also spread to the sister country, for the total number of births registered during the ten years was 1,055,020 as compared with 1,150,463 for the previous decade, being 95,443 (or 8 3 per cent) less The deaths during this decade were 836,035, as compared with 883,156 for the previous ten years, thus showing a decrease of 47,121 (or 5 3 per cent), but an *increase in the average* annual death-rate from 17 9 in the earlier to 18 2 per 1000 living in the later period It will be thus seen, looking at the diminished birth rate and the increased death rate, that the margin of national increase is rapidly declining Meanwhile the emigration continues The number of marriages registered during the period of these ten years was 221,608, or at the average rate of 4 84 per 1000 of the mean population, and there is a well marked decrease in early *marriages The number of illegitimate births* in Ireland (always exceedingly small and contrasting in this respect markedly with Scotland) shows still further diminution from 2 7 per 1000 in the decennium 1881–90 to 2 0 per 1000 in the decennium 1891–1900 The causes of the dwindling population of Ireland are of great interest but such a discussion is not exactly suited for a medical journal The influence of education is seen in these statistics, for it appears (looking to the number who "signed their names *in writing" as compared with those* who signed "*by mark*" in the marriage registers and certificates) that in 1864 61 4 per cent of the men and 49 7 of the women signed in writing, in 1871 the proportions were—men 62 5 per cent, women 54 8 per cent , in 1880 men 73 8 per cent, women 69 1 per cent , in 1890, men 79 6 per cent, women 79 1 per cent , in 1900, men 86 8 per cent, women 89 3 per cent It is a remarkable fact that, while there has been a steady increase in both sexes in the proportion signing by writing, the proportion among women, which was much below that for men in 1864, became equal to the rate for men in 1891 and has each year since exceeded it It is also curious to note that while in Leinster, Munster, and Connaught, taking the figures for each year of the decade, the married women seem to be better educated than the men, in Ulster the reverse was the case until the year 1900, when 85 5 per cent of the men and 86 3 per cent of the women signed their names in writing.

Nuisance by Gasworks

An important judgment was given in Dublin on July 28th by Mr Justice Barton The Belfast corporation was held to have injured a firm of linen merchants by smoke, soot, grime, and colly which issued from the corporation's gas retort house and injured and soiled linen goods on their premises situated on the opposite side of the street This looks like opening up a fine field for litigation

August 2nd

PARIS.

(FROM OUR OWN CORRESPONDENT)

The Epidemiology of Ulcerative Membranous Stomatitis

AT the meeting of the Academy of Medicine which was held on July 19th M Kelsch reminded his hearers that ulcerative membranous stomatitis, a disease which not so very long ago was epidemic in the army, only attacked young children and soldiers This point was an additional instance of the relationship between the pathological sensitiveness exhibited by these two classes There was a military pathology just as there was an infantile pathology and they were quite comparable The form of stomatitis in question only appeared in barracks during one century—viz, at the end of the eighteenth century. It remained sporadic until 1820, increased from then up to 1875, and then declined until it entirely vanished with the last years of the century As regarded the infantile form the course was similar It was very common and frequently epidemic in the Children's Hospital from 1830 to 1850 but since that date it had only been met with sporadically.

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the specific nature of

could only explain it

by connecting it with the attacks of sore throat due to fuso-spirillary bacilli which have been so common of late years and which in his opinion are due to a transformation of the organisms which formerly caused stomatitis of the ulcerative membranous variety.

Gastrostomy for Imperforate Œsophagus.

At the meeting of the Society of Surgery held on July 13th M Kirmisson read a paper on the case of a newly born child who had been taken to his wards in February of the current year suffering from an imperforate œsophagus. As is commonly the case in such instances of deformity, the œsophagus communicated with the respiratory passages *Within an hour or two of the admission of the* child to the hospital M Kirmisson attempted to perform gastrostomy but the stomach was so distended that it burst under the efforts of the patient M Kirmisson sewed the stomach to the abdominal wall, leaving an opening, but the infant shortly died A post mortem examination showed the rupture of the stomach had caused free hæmorrhage into the small omentum

Tuberculosis in Paris

A new dispensary has just been opened in Paris for the reception of members of the working classes of both sexes who have broken down from overwork and whom tuberculosis is on the watch to attack (*guette*) Over the entrance is inscribed, "*Prévenir, c'est guérir*" The treatment will consist in overfeeding and rest in the open air The chief of the dispensary is Dr Charles Richet

The New Hospitals

M. Mesureur, the director of the Assistance Publique, is pushing on the building of the new hospitals as fast as possible At Aubervilliers one block is already nearly completed The foundations of the nursing school at the Salpêtrière are dug but the new Pitié Hospital, which is to occupy the site vacated by the Salpêtrière, is scarcely begun, although the plans are definitely decided on The entrance to the new Pitié Hospital will be in the Boulevard de l'Hopital, opposite the general stores of the Assistance Publique Immediately inside the entrance are the reception room and the administrative buildings Then come the wards Two are allotted to surgery and two more, opposite to these, to medicine There is also a maternity block Later it is intended to build a third medical ward The nursing school will be finished n two years and the new Pitié Hospital in four years.

The Absence of "Anaphylaxie" in Man after Repeated Injections of Antidiphtheritic Serum.

At a recent meeting of the Hospitals Medical Society M. Marfan reminded the meeting that in two previous communications M. Arthus had pointed out that although the serum of a horse is not poisonous for a normal rabbit it becomes so for an "unguarded rabbit" (*lapin anaphylactisé*)—that is to say, for a rabbit which has been rendered hypersensitive by a repeated series of injections. After such a series of injections of five cubic centimetres of horse serum an œdematous infiltration is noticed at the seat of the latest injection, together with an aseptic abscess and patches of gangrene. A rabbit which has been rendered hypersensitive by six or eight injections, either given hypodermically or intraperitoneally will sometimes die in a few minutes if given an injection of two cubic centimetres by the vein of the ear. In other cases the rabbit shows acute toxic symptoms which, however, pass off for the time being, but the animal gradually becomes more and more cachectic and dies in a few weeks. A wide experience of injections of antidiphtheritic serum derived from the horse has enabled M. Marfan to state that this state of "anaphylaxie" does not exist in man, at least, in so far as regards hypodermic injections. Although the seat of injections sometimes shows swelling or redness, these phenomena are but transient and occur after one injection just as much as after many. There can be no question here of hypersensitiveness.

August 2nd.

Medical News.

UNIVERSITY OF LONDON.—At examinations held in July the following candidates were successful:—

M.D. EXAMINATION.

Medicine.—Hugh Barber, Guy's Hospital and Victoria University; Helen Beatrice Hanson, London (Royal Free Hospital) School of Medicine for Women; Arthur Charles Haslam, St. Thomas's Hospital; Septimus M. Hebblethwaite, St. Bartholomew's Hospital; Norris Norman A. Houghton, Guy's Hospital; Colin Dunrod Lindsey, St. Mary's Hospital; John Ford Northcott, Guy's Hospital; Claude Rundle, St. Mary's Hospital; and Richard Hamilton Townend, London.

Mental Diseases and Psychology.—William Ferris, B.S., St. Mary's Hospital.

Midwifery and Diseases of Women.—James Cole Marshall, St. Bartholomew's Hospital; Richard Drummond Maxwell, London Hospital; Thomas Massey Hospital; and George Struan Robertson

State Medicine.—Myer Copl[illegible] and Guy's Hospital.

M.S. EXAMINATION.

William Henry Bowen, Guy's Hospital; David Leighton Davies, M.D., University College; Walter Fedde Fedden, St. George's Hospital; Sydney Richard Scott, St. Bartholomew's Hospital; and Robert Gordon Strange, St. Thomas's Hospital.

UNIVERSITY OF EDINBURGH.—The following is the official list of passes at the recent professional examinations for degrees in medicine and surgery:—

First Professional Examination.—James Aiken, H. M. Anderson, A. H. T. Andrew, William Bainbridge, Alexander Baldie, Christina H. Barr, Margaret W. Bartholomew, Lydia D. la Trobe Bateman, Elizabeth M. A. Baxter A. R. Bearn, James Black, John Brander, Sarah E. Buyers, Ellison Causfield, J. T. Carson, Jean G. Cathels, P. H. Chauvin, D. G. Cooper, H. S. Cormack, F. G. Cowan, J. C. Craig, M.A., W. S. Crawford, Emilee C. Creaser, J. M. Dalrymple, Purser Davies, F. Dillon, A. E. Drynan, A. C. England, Cromwell Gamble, Thomas Gardner, Michael Gavin, Alexander Gibson, M.A. (with distinction), John Gilchrist, A. I. Girdweed, J. A. Gordon, A. T. Gowan, J. C. B. Grant, Robert Hannah, John Hewat, A. E. Huckett, P. F. Hugo, J. D. Ingram, K. R. K. Ivengar, Andrew Jamieson, J. A. Jamieson, F. E. Jardine, W. P. S. Johnson, R. Q. Jollie, E. W. Kirk, Robert Krause, F. R. Laing, C. L. Laurent, R. D. Laurie, H. R. Lawrence, D. C. Lee, Margaret M. Lindsay, V. D. O. Logan, G. H. Lowe, Robert M'Adoo, Margaret M'Cahon, Alexandra B. MacCallum, Ranald MacDonald, R. F. D. MacGregor, D. L. MacKenna, Kenneth Mackenzie, A. K. Maclachlan, W. M. Macnab, David Macnair, John Malloch, John Marshall (with distinction), Eva Meredith, W. A Miller, A. R. Milroy, J. A. Mitchell, V. P. Mondon, F. L. Moore, Anna L. Muncaster, William Murdie, M.A.; C. C. Murray, C. T. Newton, I. A. van Niekerk, A. C. Norman, C. A. Paterson, A. P. Pearson, J. H. Peck, H. R. A. Philp, Laura W. Pugh, F. W. Rayment, F. E. Reynolds, E. W. Richards, Charles Robertson, B.A., Marguerite Ross, Samuel Rowlands, D. H. Russell, C. S. Sandeman, W. A. Scobie, John Scott, R. L. Scott, Wilhelmina Sievwright, B. A., J. C. Simpson, J. T. Simson, E. W. Smerdon, Thomas Smyth, W. N. van Someren, J. E. Spence, R. H. Tait, J. J. Thomson, N. G. Thornley, Raymond Verel, F. H. de Villiers, A. A. Walbrugh, Dora M. Walker, E. A. Walker, W. O. Walker, L. E. B. Ward, W. H. te Water, F. W. Waterworth, A. P. Watson, M.A.; H. B. Watson, M.A., N. J. Watt, H. L. Watson Wemyss, E. V. Williams, Gordon Wilson, A. G. Yates, M.A., and W. A. Young.

Second Professional Examination.—G. P. Adshead, John Alexander, M.A., Alfred Arthur, A. F. Babonau, Ernest Banks, Frank Blamire, J. D. Bowie, H. F. Briggs, Alice M. Burn, Edward Burnet, B.A., W. P. Chrystall, J. A. Currell, J. S. Daniell, Richard Davidson, J. D. C. Duncan, J. S. Edwards, Mary S. Finlayson, F. S. B. Fletcher, K. N. Ghosh, J. E. Gordon, E. R. Grieveson, B.A., D. K. Henderson, W. M. P. Henderson (with distinction), Nettie D. Hendrie, J. M'Adam Hill, A. S. Holden, Spencer Jackson, W. W. Johns, W. T. A. Jolly (with distinction), R. Lloyd Jones, Beatrice Kippenberger, J. H. Lamb, S. B. Legge, John M'Cutcheon, A. T. M'Donald, George M'Mullan, W. J. Macnab, A. S. Mactavish, L. R. H. B. Marshall, A. H. M. Maxwell, J. E. Murray, Janet M. Murray, M.A., Meher A. D. Naoroji, A. J. P. Nowell, A. S. Paterson, Edith G. Pycroft, G. Y. Richardson, W. R. Ridley, W. G. Rivers, Graham Robertson, Thomas Robertson, W. O. Sclater (with distinction), H. L. Sells, Subrata Chunder Sen, E. D. Simson, R. St. C. Steuart, J. A. Taylor, E. W. Vaughan, A. S. Walker, and F. E. Wall.

Third Professional Examination.—Mukhtar Ahmed Ansari, A. W. Atkinson, A. J. [illegible] Norman Black, James Brennan, Gilbert [illegible] vn, B.Sc., J. S. Caldwell, Thomas Campbell, [illegible] Chisholm, F. W. Cragg, Davidina R. J. Davidson, [illegible], F. H. Dickson, M. G. Dill, James Dundas, David Eakin, H. F. Fenton, L. P. M. Gardner, H. S. Gaskell, E. G. Girdwood, J. A. Glover, M.A., E. J. C. Groves, J. T. Gunn, H. S. A. Hogg, G. H. Howe, J. H. Hume, J. F. James, J. R. Kerr, R. M. Liddell, John Lindsay, J. A. Loughridge, Peter M'Dermid, D. F. Mackenzie, William Magill, W. J. Maloney, J. A. Mathers, F. C. Mills, M.A., Harold Mowat, R. E. Moyes, E. B. Munro, R. E. U. Newman, R. H. Nolan, H. J. Norman, C. R. O'Brien, J. S. Orwin, J. L. Pearce, D. E. C. Pottinger, Gustav Raubenheimer, D. G. Reid, H. D. Robb, T. E. Roberts, J. R. Robertson, H. M. Sauzier, J. O. Shircore, E. M. Simmers, Archibald Simpson, W. Torrance Smith, W. J. Taggart, H. V. Taylor, J. H. du Toit, Andrew Wight, Richard Wilkins, C. R. Wills, and J. T. Young.

ROYAL COLLEGES OF PHYSICIANS AND SURGEONS OF EDINBURGH AND FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW.—At the July sittings of the Scottish Conjoint Board held in Glasgow the following candidates passed the respective examinations:—

First Examination (five years' course).—Alexander M'Murray, Belfast; John M'Kelvey, Belfast; Ernest Gibson, Cork; William Garfield Forde, Cloyne; Henry William Turner, Glasgow; Osmonde Rashleigh Belcher, Cork; Thomas Baird Ferguson, Kirkmaiden; Frank Humphry Ali Kiddle, Nellore, Madras; Patrick James Taaffe, Liverpool; John George Buchanan, Tiree; David Welsh, Wilsontown; and Karl Frederick Gorer, Demerara.

First Examination (four years' course).—George Vernon Edwards, Kendley, Cheshire.

Second Examination (five years' course). [illegible] Belfast (with distinction); John A [illegible] Garnet Allan, Whaley Bridge, Cheshire; [illegible] Kilmarnock; Joseph Hume Patterson, North Berwick.

Third Examination.—Alexander Brown, Galston; Percival Henderson, Skelmersdale; John Macnamara, County Leitrim; John M'Arthur, Calderbank; John Michael Moriarty, Co. Kerry; William Frank Hague Ive[illegible] [illegible]d Bolton, Dublin; Joseph Benjamin [illegible] rinidad, B.W.I.; and John Hughes Rol[illegible]

Final Examin[illegible] tiates of the Three Coöperating Authorities. [illegible]n, Carluke; Archibald Frank Greene Spi[illegible] Crothers, Banbridge, Ireland; Thomas Gr[illegible] khill; William Arthur Magill, Belfast; George Henry Waugh, Belfast; Llewellyn Charles Nash, New Shildon, R.S.O., Darlington; Percy James Thomson, L.D.S., Glasgow; Thomas [illegible] Henry Edward Strathy, Pitlochry; Reginal[illegible] Oswaldtwistle, Lancs.; Mathias Antonio Li[illegible] nburgh; John Hutchi[illegible]son Fyfe, L.D.S., Glasgow, [illegible] Edinburgh; and David Haig, Springburn.

CONJOINT EXAMINATIONS IN IRELAND BY THE ROYAL COLLEGE OF PHYSICIANS AND THE ROYAL COLLEGE OF SURGEONS.—At the final examination the following candidates satisfied the examiners:—

With Honours.—James S. Sheill.

Passed in All Subjects.—Miss Alice M. Barry, Mathew Campbell, William J. Cowell, Michael Keane, William F. B. Loughman, [illegible] Lanigan O'Keiffe.

C[illegible] J. Bracken, George P. A. Bracken, Alfred [illegible] Crawford, [illegible] A. Cusack, Benjamin D. Gibson, George A. D. Harvey, Patrick Kinsella, Francis J. Lennan, William J. O'Sullivan, James Parker, and Thomas J. Ryan.

FOREIGN UNIVERSITY INTELLIGENCE.—*Basle:* Dr. Gustav Wolff of Carlsruhe has been appointed Extraordinary Professor of Psychiatry.—*Berlin:* Dr. Maximilian Henkel has been recognised as *privat-docent* of Midwifery and Gynæcology, Dr. Heinrich Poll as *privat-docent* of Comparative Anatomy, and Dr. Fritz Frankenhäuser as *privat-docent* of Internal Medicine.—*Bologna:* Dr. B. Schiassi has been recognised as *privat-docent* of Surgery.—*Bonn:* Dr. Wilhelm Reis has been recognised as *privat-docent* of Ophthalmology.—*Budapest:* Dr. J. Siklossy has been recognised as *privat-docent* of Ophthalmology and Dr. Illyes as

privat docent of Diseases of the Urinary Organs —*Constantinople* Dr Vollbrecht of Darmstadt has accepted the offer of the post of Medical Organiser of the Turkish Army in succession to Dr Rieder —*Copenhagen* Dr Wichmann has been appointed *privat docent* of Children s Diseases and Chief Medical Officer of the Queen Louisa Children s Hospital —*Erlangen* Dr Menge of Leipsic has been offered the chair of Midwifery and Gynæcology in succession to Dr Veit who goes to Halle —*Florence* Dr Lorenzo Bardelli has been recognised as *privat docent* of Ophthalmology —*Freiburg* At last the chair of Midwifery and Gynæcology, vacated by Dr Hegar, has been filled by the appointment of Professor Kronig of Jena —*Heidelberg* Dr Franz Nissl has been promoted to the chair of Psychiatry vacated by Dr Bonhoeffer who goes to Breslau Dr Siegfried Schoenborn has been recognised as *privat docent* of Internal Medicine —*Kieff* Dr A Shim
to the chair of Ophthalmology
Hammerschlag has been recog
Midwifery and Gynæcology —*Leipsic* Dr Wilms, *privat docent* of Surgery has been promoted to an Extraordinary Professorship —*New York (College of Physicians and Surgeons)* Dr Harry McM Painter has been appointed to the chair of Midwifery —*Turin* Dr Amadeo Herlitzka has been recognised as *privat docent* of Physiology

TORBAY HOSPITAL, TORQUAY —The necessary funds having now been raised for the provision of a children's ward and a new operating theatre at the Torbay Hospital Torquay, the work will be at once taken in hand

MEDICAL PROGRESS IN RUSSIA —A note from Rostov on the Don says that shortly a Pasteur inoculation station will be opened in the Nikolaevsk town infirmary The *Svet* announces that during the coming winter a pan Russian conference will be called of town sanitary educational institutions and veterinary surgeons to consider town sanitation and hygiene

SOCIETY OF MEDICAL OFFICERS OF HEALTH —At a meeting of the West of England and South Wales Branch of the Incorporated Society of Medical Officers of Health held at Oxford on July 29th Mr Ebenezer Davies was elected president of the branch Mr Davies was appointed medical officer of health of Swansea in 1864 and is probably the oldest medical officer of health in office in the United Kingdom

PRESENTATION TO A MEDICAL PRACTITIONER —Mr A R Johnston, M B, B Ch Dub who has resigned his appointment as medical superintendent of the infirmary of St Olave, Rotherhithe in consequence of ill health, after a connexion extending over 18 years, has been presented with a silver flower bowl and a pair of silver vases by officers and staff of the infirmary in recognition of his uniform attention and kindness on all occasions during his long tenure of office

UNIVERSITY OF DURHAM —A meeting of members of the University of Durham was held on July 25th in the Owens College Union Rooms for the purpose of forming a "Manchester Association of Members of the University of Durham ' The formation of the association was proposed by the Rev W A Parry, M A, seconded by the Rev G Hilton, B A and unanimously carried Dr R Young recorded the history of the Association of Durham Medical Graduates and proposed that the new organisation should have a similar form to that society but should include all members of the University and not medical graduates only Dr J Braithwaite seconded the proposition which was carried The Rev Edward Hicks M A D D, D C L was elected President and Dr Young and the Rev D Ellison were elected Vice Presidents It was decided that the President should be elected annually and that a distinguished Durham graduate in medicine should preside during the second year Mr W H Bennett of Cheetham, Manchester was appointed honorary secretary and the Rev J W Nicholson M A, honorary treasurer The following committee was elected the Rev S J Bristow, B C L the Rev M M Oldfield M A the Rev J Downham, M A the Rev W A Parry, M A the Rev J W Nicholson M A, the Rev George Hilton, B A Dr Nathan Raw Mr G Newbolt, Dr Braithwaite Dr William Bennett Dr William Race, the Rev F C Dearden, M A, and Mr F A Pickings, B A Further information may be had from Mr Bennett, secretary, 309, Waterloo road, Manchester

T . . ENCE —Messrs W B
that the new (second) edition of
"Rontgen Rays in Therapeutics
will be ready in about two weeks the first edition being exhausted The new edition will be increased by about 100 pages and the case histories will be brought down to date The price of the work will remain as heretofore, 21s net The same firm will also publish in the autumn an important new work on the "Vermiform Appendix and its Diseases, by Dr Howard A Kelly

IRISH MEDICAL SCHOOLS' AND GRADUATES' ASSOCIATION —The summer general meeting of the above association
iversity Museum,
Oxford, the
Sibthorpe C B,
being in the
were Sir Charles
A Cameron
Colonel J P H
Boileau A M S (Trowbridge) Dr James Little (Dublin), Dr Percy V Dodd (Folkestone), Dr William Douglas (Goudhurst) Dr Robert Esler (London), Dr T Gelston Atkins (Cork), and the provincial honorary secretary Mr James Stewart (Clifton) The following motion, proposed by Dr Atkins and seconded by Sir Charles Cameron, was passed unanimously —

> That a copy of the two resolutions adopted at the special general meeting of Ma 25th
> men of the various boards of
> ith any additional statements
> a view to strengthening the

The meeting then adjourned

EPSOM COLLEGE —On July 22nd the prizes were distributed to the scholars of Epsom College In consequence of a few cases of scarlet fever of a mild type having occurred during the last few weeks of term the school committee determined to omit the usual gathering of friends and parents of pupils on Founder s Day and as the outbreak took place so near the end of the term several of the boys went home beforehand The headmaster was enabled to say at the distribution that the strict measures of isolation and disinfection observed had resulted in no fresh cases occurring for 13 days The sanitary works and the disinfection of the College have been placed by the works committee in the hands of the local sanitary surveyor who has at his disposal the services of the College surveyor and contractor The latter will be carrying out the repairs and the cleansing of the College usually undertaken at the end of each term The emptying of the building for nearly two months will with the precautions already taken, give assurance that the College will be free from all taint connected with the recent outbreak Amongst the honours gained direct from the school since the last Founder's Day are an open classical scholarship of £80 at Keble College Oxford, and 11 passes at the last London matriculation examination, four boys being in the first division The honours gained by former pupils during the same period have been numerous and varied Dr Alan Reeve Manby has received the honour of knighthood, Mr H J Mackinder has been appointed by the senate of the University of London director of the school of economics and political science, Mr R C Lucas has been appointed headmaster of Wolverley Grammar School, Kidderminster, Dr L P Phillips has been appointed professor of clinical medicine in the Medical School at Cairo and physician to Kasr el Aini Hospital, Captain G T Mair has been appointed to the command of the Artillery of the Nigeria Frontier Force, Mr L S Wood has been appointed a junior inspector under the Board of Education, and Mr E M Corner has been appointed assistant surgeon to St Thomas s Hospital and to the Children s Hospital, Great Ormond street

CLOSING OF SCHOOLS IN SCOTLAND —The Local Government Board for Scotland has addressed circular letters to the medical officers of local authorities and to the clerks to local authorities on the subject of closing of schools on account of infectious disease The Board offers for their guidance some suggestions as to the considerations which ought to determine resort to such a measure The Board calls special attention to Article 30 of the Scotch Education Department Code and to the provisions of Section 57 of the Public Health (Scotland) Act 1897 The Board considers that the closing of a school is a serious interference with the educational work of a district and is not to be recommended or required as a matter of routine or for any but substantial reasons The medical officer of health must be

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BRIDGE OF WEIR CONSUMPTION SANATORIA.—Assistant Physician.
BRIGHTON THROAT AND EAR HOSPITAL, Church-street, Queen's-road.—Non-Resident House Surgeon for six months, renewable. Salary at rate of £75 per annum.
BRISTOL ROYAL INFIRMARY.—Resident Junior House Surgeon and Anæsthetist. Also Resident Casualty Officer. Salaries at rate of £50 per annum, with, board, lodging and washing.
COLCHESTER, ESSEX AND [illegible] norary Surgeon.
COVENTRY AND WARWICK [illegible] House Surgeon. Salary £60 per annum, with rooms, board, washing, and attendance.
DEVON COUNTY ASYLUM.—Assistant Medical Officer. Salary £125, rising to £155, with board and lodgings.
DEVONPORT ROYAL ALBERT HOSPITAL.—Assistant House Surgeon for six months. Salary at rate of £50 per annum, with board, lodging, and washing.
DUMFRIES AND GALLOWAY ROYAL INFIRMARY.—House Surgeon. Salary £80 per annum, with board and washing.
GUILDFORD, ROYAL SURREY COUNTY HOSPITAL.—Assistant House Surgeon. Salary £50, with board, residence, and laundry.
HEREFORD COUNTY AND CITY ASYLUM.—Senior Assistant Medical Officer, unmarried. Salary £150 per annum, with board, lodging, and laundry.
HULME DISPENSARY, Dale-street, Stretford-road, Manchester.—House Surgeon. Salary £150 per annum, with apartments, attendance, coal, and gas.
INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE DISPENSARY.—Junior House Surgeon. Salary £75 per annum, with residence, board, and washing.
KENT COUNTY LUNATIC ASYLUM, Barming Heath, near Maidstone.—Chief Medical Officer and Superintendent. Salary £800, with unfurnished house, &c.
LANCASTER ROYAL INFIRMARY.—House Surgeon, unmarrred. Salary £100 per annum,
MAIDSTONE, WEST KI [illegible]
MOUNT VERNON HOSI [illegible] OF THE CHEST, Hampstead and Northwood.—Resident Medical Officer for the Country Branch Hospital at Northwood, Middlesex. Honorarium £80, with board and residence. Also Honorary Dental Surgeon.
NORTH CAMBRIDGESHIRE HOSPITAL, Wisbech.—Resident Medical Officer, unmarried. Salary £100 per annum, with furnished rooms, attendance, coals, gas, and washing.
PAPA WESTRAY. Orkney.—Lady Medical Officer and Public Vaccinator. Salary £75, with fees, house, and garden.
RAINHILL (NEAR LIVERPOOL) COUNTY ASYLUM.—Assistant Medical Officer, unmarried. Salary £150 per annum, with apartments, board, attendance, and washing.
ROYAL ALBERT HOSPITAL AND EYE INFIRMARY, Devonport.—Assistant House [illegible] £50 a year.
SALFORD R [illegible] Physician.
SOUTH SH [illegible] .—Assistant (Resident) Medical Officer, unmarried. Salary £200 per annum, with board, residence, washing, and attendance.
WEST BROMWICH DISTRICT HOSPITAL.—Resident Junior House Surgeon. Salary £50 per annum, with board, lodging, washing, and attendance.
WEST HAM HOSPITAL, Stratford, E.—Junior House Surgeon for six months. Salary at rate of £75 per annum, with board, residence, &c.
WEST RIDING ASYLUM, Wakefield.—Locum Tenens for two or three months. Salary £3 3s. per week, with residence, board, &c.

Births, Marriages, and Deaths.

BIRTHS.

FINLAY.—On July 28th, at Clarendon-road, Eccles, Lancs., the wife of G. L. K. Finlay, B.A., M.B., C.M., of a daughter.

ROBERTS.—On July 29th, at Sion Hill, Garstang, the wife of Henry Roberts, M.D. Brux., M.R.C.S. Eng., L.R.C P Lond., of a girl.

WADDELOW.—On July 28th, at The Chantry, Whittlesey, the wife of John J. Waddelow, F.R.C.S. Eng., of a daughter.

MARRIAGES.

HARTLEY—PERRIN.—On July 6th, at St. Mary's, Harrow-on-the-Hill, by the Rev. F. Wayland Joyce, M.A., assisted by the Rev. P. J. Dale, M.A., John Dawson Hartley, F.R.C.S. Eng., elder son of Stephen Hartley, to Margaret Young, second daughter of William Perrin, of Sudbury Court, Harrow.

SMITH—RIGBY.—On July 29th, at Immanuel Church, Streatham Common, by the Rev. H. F. S. Adams, vicar, Lewis Albert Smith, M.D., son of the late Joseph Alfred Smith of Chelmsford, to Ethel Gwendolen, only daughter of John Rigby, M.A., of Streatham.

TAYLOR—FARMER.—On July 28th, at the Church of St Bartholomew the Great, West Smithfield, Gerard C. Taylor, M.D. Cantab., of Finchley, to Isabelle M. Farmer, second daughter of Alex. Farmer, of Cupar.

DEATH.

BANNISTER.—O [illegible] House, Havant, William Bannister, [illegible] for many years Surgeon and Agent [illegible] H. to the Urban District Council of Havant, in his 83rd year.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

OVERCROWDING IN TRAINS.

A MEETING was held on July 28th at De Keyser's Royal Hotel, London, "to protest against the overcrowding of suburban trains and the dangerous neglect of the railway companies to provide proper accommodation and convenience for passengers." The Hon. Claude Hay, M P. for the Hoxton Division of Shoreditch, presided and explained that it was proposed to form an association to protect the interests of travellers. He disclaimed any desire to attack the interests of railway shareholders and believed increased facilities granted by the railway companies would result in larger dividends. The law on the subject was chaotic and required amendment. There might be legislative action in the next session of Parliament and therefore an organisation to focus public opinion on the matter was necessary. The Board of Trade officials had declared that it was the duty of the railway companies to enforce the by-laws against overcrowding. Captain Norton, M.P. for West Newington, said that the railway companies had a monopoly and had failed to fulfil their obligations. Resolutions were passed that immediate steps should be taken to secure the provision of those "reasonable facilities" that the law required, that the railway companies and other public carriers of passengers should be required to provide more adequately for the wants of travellers, and that a travellers' association should be formed with these objects in view and to protect the interests of travellers of every kind.

WANTED—A HOME.

M.B. (2) asks if any reader of THE LANCET can inform him of an institution into which a young man who is incapacitated by chronic asthma could be received upon payment of 12*s*. or 15*s*. a week.

A QUESTION OF ETHICS.

To the Editors of THE LANCET.

SIRS,—What is the generally accepted view on the ethics of the publication in popular lay periodicals by medical men of articles on medical and semi-medical subjects? Recently there appeared in two widely circulated monthly periodicals articles written, the one by the senior physician to a leading London hospital, another by a less well-known medical man. The former of these is worthy of a place in a medical journal. The latter is too "popular" in style. In their present situation they seem to earn the added letters "Advt."

I am, Sirs, yours faithfully,
M.B.

August 2nd, 1904.

*** We do not recognise the articles in question by our correspondent's description but it is difficult to lay down rules in such matters.—ED. L.

MUSSULMAN LONGEVITY—142 YEARS OF AGE.

THE *Kasbek Telegraph* reports the death at Samarkand of the Mullah Mohamed-Labir-Kasy-Domullah-Rassikoff, better known as Mullah Alyamiena. He was a Mussulman Methuselah, being at his death 142 years of age, at least so the press has announced.

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M.B. (1) is thanked for her letter. That the abuses which she details occur is undoubted, but the public health of the country is not entirely without supervision and tons of such unwholesome food are seized and confiscated yearly.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Aug. 4th, 1904.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar	Maxi-				Remarks at 8 30 A.M.
July 29	30·10	S.W.	...	107	74	60	60	68	Cloudy
„ 30	30·02	S.	0·19	124	80	65	64	67	Cloudy
„ 31	29·95	W.	...	127	76	63	62	64	Cloudy
Aug. 1	30·14	S.W.	...	126	79	59	62	65	Cloudy
„ 2	30·15	S.W.	...	122	81	61	62	67	Hazy
„ 3	30·19	S.	...	132	88	64	64	72	Fine
„ 4	30·03	S.E.	...	131	89	67	67	76	Fine

During the week marked copies of the following newspapers have been received:—*The News, Liverpool Daily Post, Scotsman, Aberdeen Free Press (Weekly), Westminster Gazette, Hertfordshire Mercury, Literary Digest (New York), Windsor and Eton Express, Standard, Cardiff News, South Wales Daily News, Surrey Advertiser, Coventry Herald, Birmingham Daily Mail, Mining Journal, Local Government Chronicle, Ipswich Times, Leeds and Yorkshire Mercury, &c.*

Medical Diary for the ensuing Week.

OPERATIONS

METROPOLITAN HOSPITALS

MONDAY (8th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St.
(2.30 P.M.),
n (2 P.M.),
Soho-square
le (4 P.M.),
M.), London

TUESDAY (9th).—London (2 P.M.),
Thomas's (3.30 P.M.), Guy's (1.30
minster (2 P.M.), West London
(2 P.M.), St. George's (1 P.M.)
(2.30 P.M.), Cancer (2 P.M.), Metro
(9.30 A.M.), Royal Ear (3 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.).

WEDNESDAY (10th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.),

London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden square (9.30 A.M.), Guy's (1.30 P.M.).

THURSDAY (11th).—St. Bartholomew's (1.30 P.M.), St. Thomas's

Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden square (9.30 A.M.), Guy's (1.30 P.M.).

(1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Throat, Golden square (9.30 A.M.), Guy's (1.30 P.M.).

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LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (8th).—POST GRADUATE COLLEGE (West London Hospital, Hammersmith road, W.).—3 P.M.: Mr. Paget: Demonstration in Surgical Wards.

TUESDAY (9th).—POST GRADUATE COLLEGE (West London Hospital, Hammersmith road, W.).—5 P.M.: Dr. Moullin: Cancer of the Uterus.

WEDNESDAY (10th).—POST GRADUATE COLLEGE (West London Hospital, Hammersmith road, W.).—4.15 P.M.: Dr. Russell: Demonstration in Medical Wards.

THURSDAY (11th).—POST GRADUATE COLLEGE (West London Hospital, Hammersmith road, W.).—5 P.M.: Dr. Davis: Diagnosis in Cardiac Murmurs.

FRIDAY (12th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith road, W.).—5 P.M.: Mr. Armour: Abscess of the Brain.

EDITORIAL NOTICES.

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MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index to Vol. I. of 1904, which was completed with the issue of June 25th, and the Title-page to the Volume, were given in THE LANCET of July 2nd.

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An Address

ON

THE VALUE OF THE ADDITION OF CITRATE OF SODA TO COW'S MILK IN INFANT FEEDING.

Delivered at the Hospital for Sick Children, Great Ormond-street, on May 26th, 1904,

BY F. J. POYNTON, M.D. LOND., F.R.C.P. LOND.,
ASSISTANT PHYSICIAN TO UNIVERSITY COLLEGE HOSPITAL AND TO THE HOSPITAL FOR SICK CHILDREN, GREAT ORMOND-STREET.

LADIES AND GENTLEMEN,—I dare to take up the threadbare subject of the artificial feeding of the infant only because I have the special object in view of introducing to your notice the value of citrate of soda. In order to do this it will be necessary very roughly to sketch in outline the difficulties which confront us in the feeding of the infant by artificial means and then to show when citrate of soda is likely to prove of use.

TWO PRINCIPLES IN ARTIFICIAL FEEDING.

When a child is taken from the breast or has never been put to the breast he has to be fed in some way or other. We naturally wish for a counterpart to human milk. Unfortunately we cannot obtain it. Nevertheless, we attempt to imitate it in some measure and are always trying new devices to obtain success. In this search there seem to be two rather different principles involved; true, they are not sharply demarcated from one another, but those who lean strongly to one or the other of them certainly differ to some extent in their methods. One of these principles always keeps in view that human milk is, what for need of a better expression I would call a vital fluid, meaning by this that its elements are very subtly blended. To this perfect blending of its elements those who keep this principle in view attach much importance. The other principle keeps in view the percentages of the chief elements in human milk and aims for a fluid which has the same percentage composition so far as its proteids, fats, and carbohydrates are concerned. It is true that these two principles are interwoven, but they determine rather different lines of treatment and imply a rather different mental attitude toward the problem.

Those who are impressed with the subtle composition of milk attempt to replace [illegible] s asses' milk or cow's milk, [illegible] Those who have faith in [illegible] f elements incline to the use of various forms of substituted milk and humanised milk. The former, when they are confronted with a case of infant atrophy from improper feeding, dwell rather upon the *nature* of the elements in the particular diet as being at fault, the latter dwell rather upon the *amount* of the elements in the particular diet—be they proteid, carbohydrate, or fat—as being at fault.

For myself, I attach more importance to the peculiar nature of the fluid that is used than to its percentage composition. It is certainly most important that we should know with some accuracy the percentages of the chief elements in human milk, but it is doubtful whether considerable variations in them make any real difference to a child with a good digestion. My sympathies are on the side of mothers who, when their infants are taking milk well, complain that they are not satisfied with food of such-and-such a dilution, which happens to be the rule-of-thumb dilution for that age. I should not tease such infants with more meals but, on the other hand, I should not be influenced in the least by a table of percentages. With a lack of faith in percentages and decimal points goes also a distrust of humanised milks—of milks with bovine bodies and human faces. I distrust them especially when they have been sterilised for long periods of time.

PRACTICAL DIFFICULTIES.

So much for these two principles; next for some practical difficulties. If we begin at the very beginning we must first compare the percentages of some of the chief elements in human and cow's milk, which are approximately:—

	Human milk.[1]	Cow's milk.
Proteids	1·5	3·0
Fat...	3·5	4·0
Carbohydrates	6 5	5·0

The differences in these percentages are clear enough and, it is well known that for infants cow's milk should be diluted and a little sugar and cream added. Unfortunately, often enough this dilution of the milk does not touch the real difficulty, which depends upon the differences between the digestibility of human milk and cow's milk—a difference, which depends in great part, though not entirely, upon the curd. Before touching upon this great difficulty, however, a few words upon the boiling of milk and its dilution are required. A healthy infant will thrive better on fresh cow's milk than on boiled milk. Unfortunately, in large towns we cannot promise a baby fresh milk. This is a penalty of civilisation and we have accordingly to make the best of circumstances. The more one thinks of this the more one is forced to see how impossible it is, except with extraordinary advantages, to feel sure that the milk in towns is safe. The many loopholes for contamination between the cow and the baby's stomach cannot at present in this country be stopped up, so we boil the milk, raising it to the boiling point for two or three minutes. The best diluting agent would appear to be good drinking water which has also been boiled; it is better, I believe, than either barley water or lime water.

Now comes the difficulty in the digestibility of cow's milk. Sometimes this is so great that to some infants it would appear to be almost a poison and in some of these cases it is interesting to trace an hereditary tendency to this idiosyncrasy. There is apparently some mysterious difference in the nature of cow's milk, which sometimes no alteration of the curd will put right, and for this reason I think it must always be that no one method for the artificial feeding of [illegible]

The dilution of milk makes the curd more digestible, but with this advantage there creeps in a frequent danger—in hospital practice a very real danger—namely, that of the over-dilution of milk. In correcting one fault there is the risk of incurring another. It is clear that although one may not be influenced very greatly by percentages it is essential that sufficient nourishment should be given to a child and if he has too little and too dilute food he will become flabby, anæmic, and prone to rachitis. Then, again, the milk which the poor get is often enough inferior, especially in fat, and this milk with dilution becomes insufficient for the child to make any real progress. It is so easy, too, to lose sight of this fact in a heavy out-patient department and as likely as not the mother will go blindly on, happy in the thought that the baby is not screaming with indigestion. In this hospital and in other children's hospitals this danger is guarded against by printed directions which are an inestimable boon to the community, though even these are lost or not read by the careless ones.

While dealing with this question of dilution it will be useful to give three more tables of percentages: one in which the milk has been diluted with two parts of water, one in which there are equal parts, and one in which there are two parts of milk to one of water. The numbers are as follows[2]:—

—	Human milk.	Cow's milk.		
		I. 1-2 of water.	II. Equal parts.	III. 2-1 of water.
Proteids	1·5	1·0	1·5	2·0
Fats	3 5	1·3	2 0	2 8
Carbohydrates	6 5	1 6	2 5	3·3

It is clear from these tables that even with two parts of cow's milk to one of water there is not enough fat. And yet

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[1] Quoted from Cheadle's Artificial Feeding of Infants, fifth edition.
[2] Ibid.

College, subsequently published in THE LANCET, I pointed out how seldom it was that infective cyclitis was met with. I was gratified to find from letters received that other ophthalmic surgeons, who had taken the trouble to inquire into their hospital records of recent years, were able to confirm the accuracy of this view. Since the year 1885, when I joined the staff of this hospital, two cases only of this disease have been under treatment. In the one many years ago the patient was a little girl who was admitted with a cystoid cicatrix following a perforating wound in the lower and outer quadrant of the corneo-scleral junction of the right eye. The injured eye had been treated elsewhere and had done well. The projecting loop of cicatrised tissue being very unsightly was snipped off with scissors and subsequently infective cyclitis supervened. The case was not mine. The second case occurred as recently as July, 1903, and as the notes thereof illustrate the present characteristics of the disease it will not be without interest to narrate them.

The patient was a woman, aged 62 years. She came to the out-patient department on July 23rd, 1903, with the history that for some weeks she had only been able to distinguish light from darkness with the right eye. She stated that in May, 1901, she was operated upon for cataract in the left eye at a London ophthalmic hospital. Unfortunately the eye went wrong and no recovery of vision resulted. When, therefore, she came to the hospital she was practically blind. Examination of the left eye showed a depressed linear cicatrix in the upper part of the corneo-scleral junction marking the situation of the section made for the extraction of the lens. Into this cicatrix the iris tissue had been dragged. The pupil was obliterated. The globe was slightly injected, tender on palpation, and tension was – 3. With regard to the right eye the ciliary and conjunctival vessels were deeply injected. On Descemet's membrane were numerous punctate opacities. The aqueous was turbid, the pupil was contracted, and the usual signs of plastic iritis were present. Tension was normal and the vision equalled perception of light. The patient was advised to come into the hospital at once for enucleation of the left eye. She, however, declined. But four days later she returned and was admitted. On the following day, July 27th, enucleation was performed. On the 28th the right eye was in a condition of *statu quo*. She was ordered on admission hydrargyrum cum creta four grains twice a day, guttæ atropinæ two grains every four hours, and chinosol fomentations twice daily to the right eye. On the 29th the patient was able to count fingers at eight inches. The aqueous was clear, the pupil dilating a little in the upper part. On the 30th Descemet's membrane was clear of dotted opacities. The ciliary and conjunctival injection was almost gone. The pupil was irregular but of moderate size. She could count fingers at one yard. On August 8th the pupil was in the same condition as recorded in the previous note. The vision equalled about $\frac{3}{60}$. The patient was discharged. At the time of her discharge the patient was so satisfied with the improvement in her vision that she has not shown herself since. I am therefore unable to record the further history of the case.

Let me next briefly pass in review some of the evidence bearing upon the infective nature of this disease. Ever since the introduction of Listerism infective cyclitis has become more and more a vanishing pathological entity. This is not due to the practice of over-zeal on the part of ophthalmic surgeons in sacrificing wounded eyes in anticipation of the onset of the disease. On the contrary, at no time more than the present has conservative ocular surgery been so paramount or, I may add, so justified by the gratifying results with which it is attended. The obvious inference, then, is that the present infrequency of the disease is directly due to the observance of the principles of Listerism. Furthermore, I think that the undoubted diminution in the virulence of infective cyclitis must also be attributed to the same beneficent influence. Not only are the attacks of the disease in the present day amenable to treatment but it is more the rule than the exception, as recorded cases have amply demonstrated, for good results to be obtained therefrom. The argument has been advanced that infective cyclitis is now a rare complication of cataract operations because surgeons exercise much more care in placing the position of their sections. This contention, however, has but little to recommend it. It might almost as equally be said that tetanus has vanished as an after-complication of operation wounds in general surgery because surgeons are more careful in their use of the scalpel. If the precise situation of a section for cataract extraction were the real cause of the rarity of infective cyclitis in the present day, how comes it that lacerated wounds of the ciliary region will heal kindly without any such complication provided that they are treated with strict antiseptic precautions? The inference is indisputable that the only safeguard against infective cyclitis is absolute antisepticism. Moreover, there is no reason for supposing that under such precautions the ciliary region or any other part of the eye will resent operative interference, or under normal conditions exhibit in these cases other changes than those which belong to natural processes of repair.

How, then, does it happen that infective cyclitis occurs? We are justified, I submit, in assuming that infection takes place either at the time of the infliction of the wound, operation or otherwise, or subsequently, before the processes of repair are completed. If we fully accept the infective theory of the disease another difficulty is smoothed out. A general belief prevails that so-called sympathetic ophthalmia and so-called sympathetic irritation are separate and distinct as morbid entities. It is not necessary here to discuss the reasons upon which this opinion is based. Suffice it, however, to say that this opinion has always seemed to me to be illogical and unsupported by any analogical facts. The so-called irritation can only be of infective origin and due to intermittent and small doses of toxin, insufficient to cause a full outbreak of the disease but yet sufficient to excite modified symptoms. To this hypothesis analogy from other diseases lends much support, into the illustration of which, however, it is not necessary to enter.

I have now said enough to emphasise my belief in the possibility of infective cyclitis becoming an almost unknown disease or of remaining in so modified a form as to cause but little anxiety either to surgeon or to patient. By our acceptance of the infective theory, although, of course, it still lacks bacteriological confirmation, we are nevertheless placed in the position of knowing how successfully to avert and combat the disease—a disease, be it remembered, which by its virulence in former days consigned so many a hapless patient to absolute blindness. Possibly a specific micro-organism of infective cyclitis may never be isolated, but what matters that when evidence so infallible leads to the sound induction of its presence and enables us to act accordingly? The failure so far to isolate it may be explained by the incompleteness of bacteriological technique. The conjunctival sac may be described as the dumping-ground of the host of micro-organisms which are met with in the human body. Apart from those which it receives from without, as from wind and dust, dirty fingers, soiled handkerchiefs, contaminated water, towels, and coat sleeves, it is kept well supplied by cultivations from the nose and lacrymal sac, not to mention the possibility of another source of supply as furnished by disease of the neighbouring bones and inflammation of their sinuses. In view, then, of the conjunctival sac forming so favourable a medium for the cultivation of such a complexity of micro-organisms, and the impossibility of sterilising it, the wonder is not that a disease of the nature of infective cyclitis should occur, but that any intra-ocular wound or operation should escape septic contamination. The probability is that the best course to pursue is to rely more on the mechanical removal of micro-organisms than on any attempt to insure complete sterilisation of the conjunctival sac; it is, then, for this reason that after each step in my intra-ocular operations the wound is thoroughly douched with a 1 in 4000 solution of chinosol.

RUSSIAN DOMESTIC SERVANTS AND MEDICAL EXAMINATION.—In St. Petersburg a bureau has been opened for the hire of domestic servants with obligatory medical examination of those hired.

METROPOLITAN HOSPITAL SUNDAY FUND.—The following are among the amounts recently received at the Mansion House for the Hospital Sunday Fund: Mr. George Herring (first instalment), £11,540; Holy Trinity, Kensington Gore, £133; St. Luke's, Redcliffe-square, £170; St. Margaret's, Westminster, £135; St. Andrew's, Fulham, £107; Brompton Parish Church, £172; St. Stephen's, Westbourne Park, £176; Emmanuel Church, Streatham, £91; St. Mary's, Aldermary, &c., £58; St. John's, Deptford, £60; St. John the Divine, Kennington, £66; Christ Church, Chelsea, £60; St. Philip's, Sydenham, £41; All Souls', Langham-place, £48; St. John's at Hackney, £30; St. Mark's Presbyterian Church, Greenwich, £35; Barnes Parish Church, £38: total, £60,000.

SUGGESTIONS FOR THE PREVENTION OF PUERPERAL INFECTION IN PRIVATE PRACTICE[1]

BY JOHN W BYERS, M A M D, M A O (HON CAUSÂ) R U I,

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ONE of the special advantages of the annual meetings of the British Medical Association is that it affords an opportunity of hearing the views of medical men from different places on the various questions which may be brought forward for discussion in the sections, and surely no subject is of greater importance, alike from a national as from a professional point of view, than that of the prevention of those conditions, so often fatal which are due to puerperal infection. Since the introduction of the modern antiseptic and aseptic methods in the obstetric art an enormous improvement has taken place in the general results of midwifery practice. This is seen specially in the maternity hospitals. In my student days, and even in the early years of my practice, maternity hospitals were regarded by the public with the greatest suspicion. Puerperal fever was constantly breaking out in them and owing to this fact their wards had frequently to be closed and many members of the profession were in favour of abolishing altogether such institutions, while now all this is changed and there is no place in which a woman can be more safely located for her confinement than in a properly conducted maternity hospital. Of the many advances that I have seen since commencing practice nothing is more striking than the change brought about in the results of obstetric practice in lying in hospitals by the adoption of the antiseptic and aseptic methods. The following statistics from two Irish maternity hospitals (at one of which I received my midwifery practical training while I am now on the medical staff of the other) are noteworthy

1 *Mortality at the Rotunda Hospital*—During the last two years (ending Nov 1st 1902 and Nov 1st 1903) there were 3370 intern cases with 15 deaths, and 4233 extern cases with nine deaths, that is, out of a total of 7603 there were 24 deaths, or a mortality of 0 32 per cent and of these 24 deaths eight were due to sepsis (puerperal infection) that is a mortality of 0 1 per cent

2 *Mortality at the Belfast Maternity Hospital*—During the last two years (1902 and 1903) there were 638 intern cases with two deaths and 555 cases in the extern maternity with two deaths that is a mortality of four in 1193 cases or 0 33 per cent, and none of the deaths were caused by puerperal infection. Adding together the cases from these two Irish maternities we have a total of 8796 cases with 28 deaths, or a total mortality of 0 31 per cent, and a mortality from sepsis (puerperal infection) of 0 09

At both of these institutions midwives and students receive their practical training. The Rotunda Hospital in Dublin is the largest maternity in the British empire. The Maternity Hospital at Belfast is a very old one with 16 beds and an extern maternity, but a new and greatly enlarged institution with every modern appliance is at present in the course of erection in that city and will be ready next year. It will be of the greatest assistance in the training of students and midwives in practical midwifery

When we turn to private practice the brilliant results obtained in maternity hospitals it will be seen have not followed. Here are the latest available statistics on this question kindly given me by the Registrar Generals of England Scotland, and Ireland. I append them in the form in which they were sent

England and Wales—Death rates from puerperal fever (under which term are included deaths recorded from puerperal septicæmia puerperal pyæmia phlegmasia alba dolens and puerperal fever not otherwise defined) in England and Wales in the years 1900 1901 and 1902

Puerperal Fever

Year	Annual death rates— To 1 000 000 females living	To 1 000 000 persons living
1900	121	63
1901	122	64
1902	118	61

The figures for 1903 are not yet available.

Death rate in Scotland from Puerperal Septic Infection in the Years 1900 and 1901

Year	Deaths from puerperal septic infection	Death rate per 100 000 of female population	Death rate per 100 000 births
1900	225	10	171
1901	287	13	217

The figures for 1902 and 1903 are not yet available

Registration of Deaths Ireland

TABLE A —*Showing for Ireland the Number of Deaths from Puerperal Septic Diseases (including Phlegmasia Alba Dolens) of Females aged 15 and under 55 Years and at the undermentioned Age Periods comprised in these ages during each of the Three Years 1900 1902*

—	Deaths from Puerperal Septic Diseases in Ireland					
Year		years	years	years	35 and under 45 years.	45 and under 55 years
1900	235	2	28	131	72	2
1901	230	3	30	121	74	2
1902	220	7	25	112	73	3

TABLE B —*Showing the Rate per 10,000 of the Number of Females in Ireland of the respective Ages according to the Census of 1901 represented by Deaths from Puerperal Septic Diseases of Females aged 15 and under 55 Years and at each of the Age Periods as shown in Table A*

1900	1 853	0·084	1 234	3 902	2 892	0 091
1901	1 813	0 126	1 322	3 604	2 972	0·091
1902	1 734	0 294	1 102	3 336	2 932	0 137

TABLE C —*Showing the Rate per 10 000 of the Number of Married Women in Ireland of the respective Ages according to the Census of 1901 represented by Deaths from Puerperal Septic Diseases of Females aged 15 and under 55 Years and at the Age Periods as shown in Table A*

1900	4·937	11 506	9 257	8 549	4·616	0 155
1901	4 891	16 959	9 918	7 896	4 744	0 155
1902	4 678	39 570	8 265	7 309	4·680	0 233

The figures for 1903 are not yet available

The number of deaths from puerperal septic diseases in Ireland also represent 23 3 22 8 and 21 6 per 10 000 births registered in the years 1900 1901, and 1902 respectively, and 5 3 5 2 and 5 0 per 100 000 of the estimated population of both sexes at all ages

In my presidential address delivered at the opening of the section of Obstetric Medicine and Gynæcology at the annual meeting of the British Medical Association in Cheltenham July 31 t 1901 I gave the statistics of mortality from puerperal fever in England and Wales, Scotland and Ireland for the five years 1895–99 inclusive. While the above figures give the mortality in obstetric practice it must always be recollected that there is another test besides (1) absence of mortality as an indication of successful midwifery work, and that is (2) absence of morbidity, by which we mean milder forms of puerperal infection recognised clinically by slight feverish attacks and having underlying pathological lesions, such as cellulitis, salpingitis or salpingo-ovaritis, and slight attacks of phlegmasia alba dolens—conditions which lead sometimes to secondary sterility and often necessitate subsequent gynæcological treatment.

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[1] A paper read in the Section of Obstetrics and Gynæcology at the Oxford meeting of the British Medical Association on July 28th 1904

The difference in the results in these two sets of statistics indicates that the chief mortality takes place outside maternity hospitals—that is, in general practice; and it is corroborated by Dr. W. Williams (medical officer of health to the Glamorgan county council) who, in his Milroy lectures, "Deaths in Childbed: a Preventable Mortality," recently delivered before the Royal College of Physicians of London,[2] shows "that during the last 20 years, when a more accurate registration has been adopted, upwards of 40 per cent. of the total childbed mortality has been caused by septic diseases." The 20 years are from 1881 to 1900. It is also a remarkable fact that during this period of undiminished puerperal mortality sanitation has made rapid strides and that both the occurrence of, and the mortality from, such diseases as typhoid fever and tuberculosis have gradually diminished, while "the mortality of lying-in institutions, both in their internal and external departments, has also decreased to the vanishing point" (Williams). These facts, as well as the circumstance pointed out by Dr. Williams that notwithstanding the precautionary measures adopted in general midwifery practice 4000 mothers are annually lost in England and Wales (speaking generally, it may be said that the deaths from accidents of childbirth and puerperal fever, as shown by the statistics of death registration, amount to about 4·7 per 1000 births and almost one half of these are due to puerperal infection; for example, there were in the year 1901 in England and Wales 2079 deaths from puerperal fever and 2315 deaths from other causes—accidents, &c.), as well as the statistics I have given, naturally raise the question, Why is it that the results of private midwifery practice are not so good as those obtained in maternities? I may be allowed to answer this by asking three questions:—

1. Is the practical teaching of students and midwives in obstetric work as thorough as it should be? Are midwives taught to appreciate fully all that is now known as to the causation of puerperal infection and the grave responsibility that this knowledge brings upon those engaged in that line of practice? Why is it that the licensing bodies demand from students evidence of having had a clinical training and a practical experience in midwifery so much less than what is required in the subjects of surgery and medicine? Is there not a risk that, owing to the introduction of so many new subjects in the medical curriculum, some of the older branches which lie at the foundation of practice, such as obstetrics, are being neglected?

2. Are we as careful (and this applies to both nurses and medical men) in carrying out the details of the antiseptic and aseptic methods in private practice as in maternity hospitals?

3. Is there not often too much meddlesome interference in obstetric practice?

Before venturing to make any practical suggestions for bringing the results of private midwifery practice more into line with what is now the rule in maternity hospitals, it may render this task easier if we first consider certain facts which throw a light upon the nature of puerperal infection.

1. In at least 75 per cent. of midwifery cases labour is a natural physiological process, occurring in such a manner that nothing more than a certain amount of care—expectant watchfulness—is required and no interference is needed.

2. A woman who delivers herself spontaneously and who has never been examined internally rarely has any signs of puerperal infection. Leopold was the first to show this when he pointed out that at the Dresden Lying-in Hospital of a series of 248 cases who were delivered without medical aid, who were neither examined, touched, nor syringed, 98 per cent. had no fever during the puerperium. Five only had febrile symptoms and they were slight. This observation has since been frequently confirmed by others.

3. Women who enter a lying-in hospital after delivery—that is, those confined on the way to the hospital—rarely suffer from puerperal infection because, through not having been examined internally, they have avoided the risks of having the germs which cause the disease conveyed to them. This fact has been observed frequently by those connected professionally with maternities.

4. The uterus and vagina in a pregnant woman who has not been examined internally contain no pathogenic organisms but, as has been demonstrated by Whitridge Williams of the Johns Hopkins University, they are present upon the inner surface of the labia and the margins of the hymen in at least 60 per cent. of pregnant women, and the mere introduction of a sterilised glass speculum two centimetres in diameter, which he points out is no larger than the two fingers employed for examination, carries microorganisms into the vagina in at least one-half of such cases.

5. The results of midwifery practice become better the less vaginal examination and the more abdominal palpation is used.

6. *Vaginal examinations during labour are always attended* with risk and should never be employed unless to elicit information for the welfare of the patient which cannot otherwise be obtained by abdominal palpation. It must never be forgotten that a patient in labour who has not been examined internally is almost absolutely safe from the risks of puerperal infection.

7. Puerperal infection is due to the introduction of microorganisms which may be found on the patient's vulva, her clothes, bed, instruments, and the hands and clothes of those who look after her; hence the importance of disinfection of the patient's vulva, of a clean bed and clothes, of *disinfection of all instruments and of the hands of her* attendants who should wear sterilised overalls or clean, freshly laundried towels pinned carefully so as to prevent their own clothes coming in contact with the patient. Care should be taken that in the case of an internal examination, the hands after being disinfected do not become fouled again by touching the bed, clothes, vulva, &c., before entering the vagina. In making a vaginal examination (the vulva having been previously washed with soap and water and rinsed with a corrosive sublimate lotion 1 in 1000) the disinfected thumb and forefinger of the left hand are used to hold open the vagina so that the fingers of the right hand, previously sterilised, pass direct from the basin of perchloride lotion into the parts without touching the inner surface of the labia or hymen. The same care and precautions should be taken in sterilising the hands in obstetric as in surgical work. These facts suggest certain precautions which must be observed if we are in private practice to prevent the occurrence of puerperal infection.

I. Nurses and students should be taught clearly the risks of vaginal examination and the great value and absolute safety of replacing this method by abdominal palpation. So far back as 1886 Credé wrote—"Even the simplest manipulation may cause infection. It should therfore be laid down and taught as a fundamental principle that internal examination of parturient women should be altogether avoided or restricted within the narrowest possible limits. It can be very well replaced by external examination. To instruct their pupils as thoroughly as possible in this method is the present and future duty of *teaching institutions*." Have we teachers done our duty in this respect? Is it not too often the case that reliance for diagnosis is placed on vaginal examination alone employed as a mere matter of routine to see how the labour is proceeding, while the danger involved in such a method is not fully realised. I can only say—as a personal contribution—that I was taught by others the vaginal *method and that subsequently I taught myself the abdominal* plan of examination and the more I use this latter method the greater I appreciate its value. The man or woman who employs this method will, I am confident (and such has been the experience with students in maternities), be more accurate in his or her diagnosis and will rely less and less on the vaginal route. In many confinements during the past few years I have not made a single vaginal examination, as the external plan gave all the information required, and the only thing one cannot yet be sure of is prolapse of the cord when the membranes rupture. If in a normal case an internal examination is to be made at all the best time is just after rupture of the membranes. I regret very much that in the "Directions to Midwives," framed by the Central Midwives Board, no reference at all is made to the importance of abdominal palpation, although candidates are required before being admitted to an examination (pages 8 and 24, Rules of Central Midwives Board) to produce a certificate certifying that they have attended and watched the progress of not fewer than 20 labours, making abdominal and vaginal examinations during the course of the labour, and personally delivering the patient, and among "Duties to Patient," No 8 (p 15), "no more internal examinations should be made than are absolutely necessary" is ambiguous as it raises, without answering, the question, How many are absolutely necessary? and, by omitting any notice of the abdominal method it tends to emphasise the fact that the vaginal examination is the only method to be employed I now meet often at confinements nurses who are wonderfully skilful in abdominal palpation and personally I prefer to recommend to my patients midwives who make no vaginal examinations ' Dr R D Purefoy, whose term of office as Master of the Rotunda ended on Oct 31st, 1903, and who very kindly supplied me with the statistics from that institution, writes me "In most of the cases in the hospital *no* vaginal examination is made In some *one* is made Where necessary, of course, this is repeated " I am not prepared to deny that a woman who has never been examined at the time of her confinement may subsequently develop sepsis I have seen such cases and Dr Purefoy tells me that at the Rotunda "in some of the fatal septic cases no vaginal examination had been made before the trouble arose,' but such cases are extremely uncommon and may be due (1) to the introduction of the gonococcus shortly before labour; (2) contact by the patient's fingers touching the genitals, (3) contact with dirty clothes or a dirty bed, and (4) Whitridge Williams's account of the bacteriology of the inner surface of the labia minora and hymen shows how easily a wound there in a natural labour might allow pathogenic organisms to enter Still, admitting all this, the results of modern maternity hospitals show beyond question that vaginal examinations are the main source of puerperal infection

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[2] THE LANCET, June 18th (p. 1701) and 25th (p. 1772), and July 2nd (p. 4) and 9th (p. 64), 1904.

II Nurses and students should be taught more and more clearly the cause of puerperal infection—viz, that it is introduced from without, and also the importance of keeping themselves and the patient aseptic and how extremely easy it is for the disease to be introduced

III It should be clearly recognised that in at least 75 per cent of the cases labour is a natural process not to be interfered with and that, as has been well stated by a recent writer (Edgar), "the whole process of labour properly considered, is a conservative process, the tendency of which is to prevent sepsis and it should be our aim not to thwart this process or supplant it by methods of art but to follow and aid it, interfering only, when, for one reason or another, the resources of nature prove inefficient" It was a well known saying of the older school of obstetricians that "meddlesome midwifery is bad," and surely vaginal examinations unless when clearly indicated, the uncalled for use of the forceps, early rupture of the membranes, douching unless in very special circumstances, and any interference with the third stage of labour (such as manual removal of the placenta) are all examples of meddlesome midwifery When, however interference is necessary during the course of labour the same precautions should be taken as regards patient, instruments and our hands and arms as are now employed in abdominal operations Attention has been drawn by several writers recently to the midwifery bag as being a "weak point in the obstetric defence of the woman in labour against the assaults of sepsis" (Ballantyne) I can recommend the following plan which I have used for the past five years with the best results After the use of the forceps or any other instrument it is carefully washed with soap and water and a nail brush, dried, and rolled up in a towel or paper and taken home without being replaced in the obstetric bag It is subsequently sterilised at home by boiling, dried with a sterilised towel, and placed in a sterilised bag which is put in the large midwifery bag When required at a confinement it is taken out of its own sterilised cover and placed in boiling water before being used

There are three other precautions which are of considerable importance as preventing indirectly the occurrence of puerperal infection

1 The careful general examination of pregnant women is important, so that at an early date we may detect a flaw in any of the organs (heart, kidneys, lungs), the knowledge of which may lead to the adoption of a judicious prophylactic treatment and so maintain the patient's strength and health and resisting power.

2 A few weeks before the expected date of the confinement—especially in a primipara—a careful abdominal examination should be made, so that we may learn the presentation and position of the fœtus, the amount of liquor amnii, and the presence or not of an abdominal tumour, and if there is the least suspicion of deformity the pelvic cavity should be measured

3 The immediate repair of any laceration of the pelvic floor following delivery is a most important point in the prevention of puerperal infection

Such, in brief, are the suggestions which, if fully and fairly carried out, would, I venture to hope, soon make a marked change in obstetric practice and bring the results of private midwifery work more into line with the brilliant records now achieved in properly conducted maternities.

Belfast

NEPHRITIS IN INFANTILE SCURVY

By GEORGE F STILL, M A, M D CANTAB,
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THE occurrence of hæmaturia in infantile scurvy is now well recognised, it is also recognised that when hæmaturia is not present a trace of albumin in the urine may apparently represent a slighter degree of the same abnormal vascular or blood condition, whatever it may be, which determines the occurrence of hæmorrhage in scurvy Both these abnormal characters of the urine are, I believe, much commoner than has been supposed, indeed, so far as my own observations go, it would seem to be the rule rather than the exception to find that the urine in any case of pronounced infantile scurvy contains either a trace of albumin or blood But this hæmaturia is evidently simply part of the general hæmorrhagic tendency of scurvy, there is nothing whatever to suggest that it is due to a nephritis, the urine is not characteristic of renal inflammation, and when albumin is found without blood it is almost always so slight in amount that it certainly could not be accepted as *per se* evidence of nephritis The term "hæmorrhagic nephritis' applied to these cases of simple hæmaturia in infantile scurvy seems to me a misnomer, even when, as in one recorded case,[1] "a single granular cast was found on two occasions' The two cases recorded here seem to be of interest as showing, so far as can be shown from clinical evidence alone, that infantile scurvy may produce not merely albuminuria or hæmaturia but actual nephritis

CASE 1 —A girl, aged 11 months, had been wasting for two months For eight months before the wasting began the infant had been fed on unsweetened condensed milk and for the last two months had been fed on fresh milk boiled and mixed with Allenbury Food No 3 When seen by me (Feb 10th, 1903) the infant was much wasted, the skin was sallow and very dry, the legs looked "puffy' especially over the feet, but there was no definite pitting on pressure There was no tenderness of the limbs which were moved freely There were two upper and two lower incisors present and the gums around these teeth were greatly swollen and deep violet purple a very typical example of the gum affection in infantile scurvy The urine at this time was slightly red, showed many blood corpuscles, some leucocytes, and on boiling with acetic acid there was "a moderate cloud of albumin", no casts were seen On Feb 19th, after eight days of treatment with potato cream, orange juice, unboiled milk, and raw meat juice, the gums had almost entirely lost the purple discolouration and were much less swollen and the infant was said to be "much brighter" No further specimen of the urine was obtained until the 20th, it was then no longer red and only a few blood corpuscles were found with the microscope, the amount of blood had greatly diminished In spite of this diminution, however, the albumin had greatly increased and formed a flaky precipitate on boiling with acetic acid Microscopic examination showed, without centrifuge many tube-casts, granular, hyaline, and epithelial Although the scorbutic condition of the gums was so much improved and the infant's general condition decidedly better there was still considerable illness and the skin remained dry and harsh. There was no œdema now or at any time. On the 26th the urine still contained a large amount of albumin; with the microscope blood corpuscles were found with difficulty, the number of tube-casts was less, but hyaline and granular casts could still be found easily without centrifuge. The infant was now much better in every way. On March 4th the infant seemed quite recovered from the scurvy but there was still "a cloud of albumin" on boiling with acetic acid. From this date onwards no casts were found but a slight cloud of albumin persisted, and when the infant was last seen, 16 months after the scurvy, there was still a constant trace of albumin in the urine.

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[1] Deutsche Medicinische Wochenschrift, May 5th, 1904, p 705

CASE 2.—A boy, aged eight months, had been fed on the Allenbury foods since the age of four weeks (except for a period of six weeks during which he had Benger's food made with cow's milk). The Allenbury foods had been continued until a fortnight previously when sterilised milk was given and a little raw meat juice. One month ago it was noticed that the feet and legs became tender and that he did not move his legs about. A fortnight ago his left eye suddenly showed swelling and redness of both lids which a few days later had the bruised appearance of "a black eye." Seen by me on April 28th the infant showed marked proptosis and outward displacement of the left eye. He cried piteously when the legs were moved. There was slight hæmorrhage in the gum behind the one lower incisor which was present. The child was pale and seemed ill. There was no general œdema. Treatment was begun at once with potato-cream, orange juice, &c. On May 3rd a specimen of urine was obtained and showed on boiling with acetic acid a flaky precipitate of albumin which was evidently much more than could be accounted for by the few blood corpuscles discovered by the microscope. There was a large number of casts, epithelial, granular, and hyaline, seen without centrifuge. On the 8th all the tenderness of the limbs had gone and the proptosis of the eye was much less. On the 20th a second specimen of urine obtained showed no blood but some albumin and still epithelial and granular casts, but not nearly so numerous as before, and only found with the centrifuge. On the 23rd the urine still showed a definite cloud of albumin on boiling with acetic acid but there were no casts. The infant now seemed quite well. On June 9th there was still a trace of albumin in the urine but no blood and no casts.

The difficulty of obtaining specimens of urine and the small amounts available in both these cases made the record of the urinary condition much less continuous and less complete than one could have desired; both the infants were treated at home and I am much indebted to the kindness of Dr. A. G. Jones of Harlesden in the one case and to Dr. R. M. Fraser of Ilford in the other case for opportunities of watching the course of the renal affection. Perhaps the most noteworthy feature in these two cases of nephritis with infantile scurvy was the latency of the nephritis. Apart from examination of the urine there was nothing to lead one even to suspect the presence of nephritis. This, of course, is not peculiar to nephritis with scurvy; it is noticeable in nephritis with various other conditions, for instance, I have recently had under my care a child, aged four and a half years, with pneumococcal empyema, whose urine was found quite unexpectedly to be very albuminous and to contain a very large number of granular and epithelial casts, although there was nothing in the child's appearance or in the symptoms to suggest any renal disease. The possibility of such latent nephritis makes routine examination of the urine desirable in all cases of infantile scurvy.

The relation of the hæmaturia to the nephritis in these cases is not very clear; the marked diminution of the hæmaturia which was present in the first case before any evidence of nephritis appeared in the urine rather suggests that the blood may have been due partly or entirely to the hæmorrhagic tendency of scurvy, not to the nephritis. The acute stage of the nephritis, as judged by the quantity of albumin and the presence of casts, was of short duration in both these cases; in the former casts had disappeared within 12 days after the onset of nephritis; in the latter they were absent 20 days after the renal affection was first noticed; but as might be expected the damage to the kidney is more lasting when this nephritis has occurred than in the common cases of simple hæmaturia or albuminuria with infantile scurvy. In both the present cases a trace of albumin persisted in the urine long after the infant had completely lost all symptoms of scurvy, in the latter for at least some weeks, in the former for at least 16 months.

The relation of the nephritis to the infantile scurvy must remain undetermined until we have more exact knowledge of the pathology of scurvy. At present any views on this point can only be speculative. It may perhaps be contended that the occurrence of nephritis in infantile scurvy points to the presence of some materies morbi rather than to a mere deficiency of some normal constituent in the blood—in other words, that it indicates a positive rather than a negative fault as the cause of infantile scurvy. Even on the assumption, however, that nephritis implies some such irritant it by no means necessarily follows that scurvy is due to a similar irritant, be it ptomaine, toxin, or micro-organism. The nephritis may equally well be secondary, due perhaps to toxic products of the disturbed metabolism in scurvy, which disturbance itself may be due—and in my opinion probably is due—solely to a negative fault—the absence of certain food-constituents from the diet. But it may not be necessary to assume any such irritant as the exciting cause of the nephritis. It has been pointed out by Sir Thomas Barlow that interstitial hæmorrhages are sometimes found in the kidneys in fatal cases of infantile scurvy and these, I would suggest, may entail a certain amount of inflammatory reaction which when the hæmorrhages are sufficiently numerous or extensive may produce the ordinary evidences of renal inflammation in the urine.

Harley-street, W.

"INTERRUPTED CIRCULATION" AS A THERAPEUTIC AGENT,

ILLUSTRATED IN TWO CASES OF RHEUMATOID ARTHRITIS.

By WILLIAM EWART, M.D. CANTAB., F.R.C.P. LOND.,
SENIOR PHYSICIAN TO ST. GEORGE'S HOSPITAL AND TO THE BELGRAVE HOSPITAL FOR CHILDREN.

IMPROVED union of fractures was obtained by Hugh Owen Thomas (1876)[1] by "damming the circulation" above and below the lesion. This practice had previously been revived from Ambroise Paré[2] by v. Dumreicher[3] or perhaps rediscovered by him, as Paré's method did not include any compression below the lesion. These results and the good effects derived in various affections, including joint affections, by Professor August Bier (1894)[4] from a "continuous passive hyperæmia" induced by slight compression of the veins[5] above the part affected, taken side by side with the benefit secured in the following cases by working on an opposite principle, show that the same therapeutic ends may sometimes be attained by different means. All these observers used the tourniquet *to the veins only* (and therefore, most important to note though not mentioned, to the lymphatics also) with a view to increasing local nutrition by vascular overcharge. The principle of treatment to be described in this communication has an equally wide range of application to the various tissues, including the extravascular tissues, but its mechanism is an imitation not of an abnormal circulation, but of the healthy circulation with its afferent pressure-waves of nutrient blood and its efferent suctional stream of denutritive juices. Both these forces are artificially intensified by rapid alternations of capillary flushing and of capillary emptying. The tourniquet is applied intermittently (for periods of one half to two minutes, repeated several times at a sitting); and sufficient pressure is used to close *the arteries* after draining the limb by elevation and stroking.

Artificial anæmia, kept up for periods of five minutes, seems to have been the essential feature in the cure of a case of Raynaud's disease by the tourniquet reported upon the physiological 'blocking effect of the elastic constriction on the peripheral vasomotor nerves The simpler view seems to be that the emptied arteries suddenly receive a ramming charge when the tourniquet is removed and that the internal surface of the capillaries and of the lymphatic spaces in which they are immersed is submitted to sudden stimulation, whilst on the other hand, during the preceding stage of ischæmia a certain amount of suction must have existed within them not only owing to the collapse of the elastic tissues, but also from the intravascular negative pressure set up by the procedure The tendency would be for the emptied blood vessels to suck up some of the remaining tissue lymph, or in cases of inflammation some of the more fluid inflammatory exudates Of these two actions that of the forcible arterial flushing and that of the suctional tissue drainage it is hard to say which might be the more efficient therapeutic agent in affections of inaccessible tissues such as bone bone marrow, articular cartilages and synovial membranes In rheumatoid arthritis with its special features of immobilisation of the joints and of stagnation of the lymphatic circulation they would both fulfil direct indications, and it has proved to be so in the cases to be narrated But a variety of other tissues and of other conditions might be equally benefited and in addition to any further observations in the e wider fields of work I shall hope to hear of the larger experience of others

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[1] The Principles of the Treatment of Fractures and Dislocations, p. 40. London: H. K. Lewis, 1886.

[2] Œuvres complètes d'Ambroise Paré. Édition Malgaigne, vol. ii., livre xiii., chapter xxx.

[3] Nicoladoni: V. Dumreicher's Methode zur Behandlung drohender Pseudarthrosen, Wiener Medicinische Wochenschrift, 1875, Nos. 5, 6, and 7.

[4] Hyperaemia als Heilmittel, pp. 30, 64, &c. Leipsic: F. C. W. Vogel, 1903

[5] Bier (loc. cit., p. 16) was also one of the earliest advocates of "active hyperæmia" by the application of hot air, &c.; 1891.

The technique which was employed is exceedingly simple A padded armlet of soft leather or failing this a circular pad of lint and cotton wool of sufficient thickness to protect the nerves, having been secured round the upper arm or the thigh a loop of indiarubber tubing of suitable thickness is passed behind the limb over the pad and the two ends of the loop are strongly put on the stretch with one hand The other hand immediately grasps the tubes close up to the front of the limb thus tightening the loop into a strong ligature or tourniquet The degree of arterial occlusion depends upon the strength with which the two ends of the loop are pulled up the limb having previously been drained of much venous blood by raising it and by stroking the larger veins empty The compression has for its effect quickly to induce cutaneous blanching and numbness of the extremity, similar changes doubtless taking place through the thickness of the limb For ordinary purposes half a minute or at most two minutes of this will suffice The tube is then let go, and this is at once followed by a bright cutaneous flush of capillary injection and a pleasant feeling of warmth The same manœuvre is then repeated say six times at intervals of a few seconds Two or more such sittings may be used daily The method is so simple that I have been able to intrust its application to my nurses To them as well as to my able house physicians, Mr P F Tinne and Mr P A Hayne I am indebted for their most valuable assistance In both the cases the results hitherto obtained have been most satisfactory but their advanced articular and periarticular changes and the resulting articular stiffness cannot be got quite well short of a much more protracted course of treatment

CASE 1—This case was exhibited before the Harveian Society in May, 1904 when the method was demonstrated The right wrist had been selected for treatment because it was so much worse than the left more thickened much more painful, and almost absolutely stiff The first and each subsequent application gave great relief to the constant soreness and pain which entirely ceased after a few days The swelling and synovial effusion also gradually lessened until they were less than in the left wrist which, however, still remains the more mobile of the two The patient a girl aged 17 years (Medical Register, No 214) was admitted on Feb 6th 1904, into St George s Hospital as a case of relapsing acute rheumatism She had first been seized 11 weeks before and again after a short period of improvement two weeks prior to her admission The ankles and knees had been slightly affected and the wrists permanently affected from the first She was placed under the usual treatment by salicylate and iodide and milk diet, but the improvement was not satisfactory and the temperature continued to oscillate above normal until after three weeks she was made to lie out of bed and was given tonic treatment abundant food, and some port wine, with passive movement and iodine applications to the wrists Though April 26th with such good effect that on the 28th it was ordered to be used twice daily, with six turns of half a minute each at each sitting It was then and has continued to be limited to the right wrist in order to afford a basis for judgment Whilst much of the improvement in the patient as regards appearance strength, and weight (the weight has gone up from 6 stones 2 pounds to 7 stones 11 pounds) is to be ascribed to the general treatment adopted the striking relative improvement which has occurred in the right wrist cannot be explained except in connexion with the special local treatment which it has received It now presents hardly any soft swelling and the fluorescent screen shows a distinct view of the carpal bones previously blurred This point having been clearly established the same treatment will henceforth be used for both wrists and there is a good prospect of their ultimate complete recovery

CASE 2—This was a case of chronic crippling osteosynovitic rheumatoid arthritis of both wrists originating in a gonorrhœal attack 11 years ago in a coachman, aged 39 years who was admitted on May 3rd 1904 into St George s Hospital (Medical Register No 685) Both feet had been originally affected disabling him for 12 months He broke his right wrist two and a half years previously and a second attack of ' rheumatism about two years ago settled in the knees and in the hands Since last December the hands had gradually become worse, but he kept on the box until two days before admission when swelling of the right knee caused him to lie up On admission he was found to be suffering from a gonorrhœal discharge with synovitis of the knee and with chronic changes and stiffness of both wrists which were massively enlarged and also presented much baggy effusion The usual forms of treatment were adopted and in view of his gouty tendency he also was prescribed colchicum ite well soon after the cessation a return of the latter the left and was cured by local treatment and by curing the urethritis Meanwhile no improvement was perceptible in the wrists and on May 24th the treatment by interrupted circulation' was begun The right wrist was selected for treatment because it was so much more swollen and much more rigid partly in connexion with the old fracture The treatment was well borne produced no discomfort but after two or three applications considerable alleviation of the aching and of the swelling At the present time the right wrist is almost quite free from the synovial swellings which are still present in the other wrist (not treated by this method) and though still massive and misshapen it has regained a limited range of movement which is daily increasing under passive motion The subacute effusion in the right knee was also treated with decided benefit by the same method and it was possible to verify in it by fine measurement the diminution in size brought about by separate applications It is noteworthy that during the last few days the patient has spontaneously undertaken for himself and successfully carried out the application of the india rubber tube tourniquet to his right arm A continuance of this treatment and of the hot water massage seems likely to bring about a return of considerable mobility in the crippled joints

Remarks—In both these cases the synovial and lymphatic effusions have appeared to me to have been benefited more largely than the peri articular fibrosis, and this is consistent with the views expressed as to the probable mode of action of this method But in the treatment of the stiffness of joints there is a definite help in the numbness which accompanies the stage of ischæmia and which allows, within prudence an increased amount of passive motion to be applied The method would therefore be specially promising in the early stages and in the exudative forms of rheumatoid arthritis it being understood that it is merely an adjunct in our treatment from which we cannot spare any other available resource whether local or constitutional

Rheumatoid arthritis however as previously stated is only one of many conditions both medical and surgical likely to be benefited by interrupted circulation The following N S Lambert[7] has resorted a constricting elastic band to ation with the object of preventing gangrene in a case of ligature of a wounded femoral artery. Another surgeon, L. Isnardi[8] of Turin, finds that the application of an Esmarch's bandage before changing the dressings of large wounds or burns obviates the distressing pain and bleeding otherwise unavoidable. Other developments will doubtless follow in the department of medicine and in connexion with cutaneous affections. But it remains a problem whether, and in what form, the principle may be made available for other districts than those of the limbs. In conclusion, I gratefully trace to H. Cushing's paper the original impulse and to George Oliver's most instructive work much of the growth of this thinking.

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* Journal of Nervous and Mental Diseases, November 1902

[7] Cf Semaine Medicale May 18th, 1904

Curzon-street, W.

AN EPIDEMIC OF ACUTE OPHTHALMIA.

BY SIMEON SNELL, F.R.C.S. EDIN.,
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EPIDEMICS of ophthalmia attacking large numbers have at different times been recorded. These have often been connected with military establishments or other institutions where people have been congregated together. The disease in these epidemics has been trachoma or granular ophthalmia and the disastrous and far-reaching effects of this dire disease have been well exemplified in many such outbreaks. Other epidemics of less severity have also from time to time been recorded. In 1894[1] I related at some length particulars of an outbreak of ophthalmia in a good-class boarding school which affected large numbers and led to the temporary breaking up of the school. A well-known surgeon who was called in after I had first reported on the outbreak was of opinion that the disease was trachoma. The sequel, however, showed the correctness of my first opinion that it was a less serious disease and that it was more of the nature of that described by Fuchs and others as follicular conjunctivitis. Those interested in the subject of epidemic ophthalmia may find the account of this outbreak and the means adopted for its eradication worth perusal.

The outbreak now to be described is, so far as I am aware, a rare and unusual one both from the numbers affected and the character of the disease. It spread very rapidly and in such a way that admitted of no question of its contagiousness and quickly subsided when measures to combat it were adopted. Everyone seeing much of ophthalmic practice, especially among hospital patients, is accustomed to observe instances of muco-purulent or catarrhal ophthalmia and is aware also how highly contagious a disease it is. Not infrequently several members in a family will be afflicted. A case coming under observation leads to inquiry as to others being affected and to instructions being given for preventing the extension of the disease. It is very rare, however, for the affection to spread in a community to such numbers as was the case in the outbreak which I am about to describe.

On May 5th of the present year I received a communication from Dr. H. Peck, medical officer of health to the Chesterfield rural district sanitary authority, informing me that a serious outbreak of contagious ophthalmia had occurred at Staveley, one of the townships of his district, and desiring me to consult with him as to the nature of the epidemic and the steps to be taken to eradicate it. On the day following we accordingly met at Staveley. A large number of cases were gathered together in one of the schoolrooms for examination. Before, however, referring to these it will be well to give some particulars of the outbreak and of the sanitary aspects of the district. Staveley is a township with about 12,000 inhabitants and Dr. Peck informed me that the district was a very healthy one. The first case of ophthalmia occurred about three months before our visit and since that time others had appeared in the same district and later in other parts. Recently the number affected and the absentees thereby of children from school had rapidly increased. The sanitary inspector had, therefore, specially reported the matter to Dr. Peck on May 5th. Those mostly affected were children, but the epidemic implicated people of all ages, amongst whom was a female teacher. The Staveley elementary schools are national schools and the number of children attending them was given me as follows: boys, 328; girls, 240; and infants, 400. In addition, the Roman Catholic schools accommodated 180 children. There was no evidence of overcrowding in the schoolrooms and Dr. Peck, who frequently visited the schools, had no fault to find with the cubic space. The intercourse of the children occurred in the schoolrooms and playgrounds. There was a washing place in the boys' school but it was in a separate building. Any boy requiring to use it was obliged to obtain the key from the master and consequently not one a week applied for it. This arrangement, though open to objection on some grounds, for the purpose of our present inquiry excluded the propagation of the disease at the boys' school either by towels or washing basins. In the girls' school there was a washing place in the lobby and it was therefore more used. It has been mentioned that a large number of those afflicted were brought together for examination. These exemplified the characteristics of the epidemic and showed how widely spread it was. Altogether 24 families were represented. In many instances one or other of the parents attended with their children, in others the children came by themselves. The cases examined and the evidence ascertained as to other members of the same families disclosed a total of 68 afflicted, and practically the whole of these had occurred within the previous fortnight. Some interesting information was obtained as to the numbers affected in different families. Frequently one or other of the parents, usually the mother, had been affected as well as the children. In two families five children and the mother had suffered, in another six and the mother, whilst in one no less than ten children and the mother had been afflicted. The prevalence in other families was noted as follows: four children and the mother, three children and the mother, three children and the father, and three children alone.

The fact that the sanitary inspector, with the help of the schoolmaster and school attendance officer, was able at less than 24 hours' notice to collect this large number of afflicted families gave unmistakeable evidence of the widespread extent of the epidemic. It appeared an inside estimate to say that 200 persons must have been afflicted with the disease. Dr. Peck wrote me later to say that on the day following our examination he had come across nine additional cases attending other schools. The character of the disease was the same in all—muco-purulent or catarrhal ophthalmia. The cases examined were in various stages of the disease; some were very acute, with swollen eyelids and free discharge of flakes of muco-pus, whilst others had passed through this stage and the thick discharge had ceased. In no case was the cornea implicated. On the day following this examination, however, I saw a woman from the same district suffering from the disease. It was very acute in both eyes and the discharge was plentiful. The cornea in one eye was affected. Her recovery was, however, excellent. In all the cases both eyes, so far as I could learn, were affected. The Koch-Weeks bacillus was found with the microscope but attempts to obtain cultures failed. This failure with cultures, I understand, is not infrequent even when the bacillus is detected with the microscope. The specimens for examination were taken from the woman just referred to in whom the disease was in the acute stage and was typical of the outbreak.

The investigation at Staveley thus clearly established the nature of the disease, its extremely contagious character, and the widespread prevalence of the epidemic. It will have been noticed that the great bulk of those afflicted were children of school age. They were, whilst the disease was acute, physically unfit for school and had been usually kept at home by their parents. It did not appear, therefore absolutely necessary for the present to close the schools and I reported to the sanitary authority that if other measures were at once adopted it was to be hoped that the epidemic would cease without resort to such a procedure. It was pointed out that many of the cases examined were in a very acutely contagious condition and all the others were more or less so and that it was necessary to recognise how very contagious the disease was. The smallest particle of the discharge reaching a healthy eye would speedily affect it. Many of the cases were fortunately making a good recovery but it was necessary to bear in mind that in others sight might be endangered and that therefore the need for treatment should not be forgotten.

The following suggestions were made: 1. That a notice should be issued by the medical officer of health setting forth the contagiousness of the disease and the necessity for separation, as much as possible, of the affected from the healthy children The importance should be urged of the use of separate towels, handkerchiefs, &c. Linen used for the children's eyes should be destroyed Parents before and after giving attention to the children's eyes should be careful to wash their own hands It was better for the children to wash with running water at the tap than from basins. The disease might be spread by others using the same water which one affected had previously used 2 Any child suffering from the disease should be kept from school and not allowed to return until all discharge from the eyes had ceased 3 The necessity for treatment should be pointed out to the parents and they should be advised to apply to a medical man as soon as the disease commenced Speedy treatment would not only avert the disease and its danger but would also shorten its duration and tend to prevent the spread of it 4 The importance of preventing the children using the towels in the schools was impressed upon the schoolmaster and this would doubtless be carried out

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[8] Ibid., June 22nd, 1904.

[1] Brit. Med. Jour., Nov. 17th, 1894.

With the greatest promptitude after our consultation Dr Peck issued a printed notice which admirably expressed the salient points It ran as follows —

ACUTE CONTAGIOUS OPHTHALMIA

These notices were posted in different parts of the district and distributed by means of the scholars of the seven schools within three miles of the affected area The warning given to, and the distribution of 1500 of these handbills by, the scholars no doubt aided very materially in limiting the spread of the epidemic A zone was formed beyond which it was thought the disease was not likely to extend It is satisfactory to note that the means adopted were successful and that the epidemic was soon at an end Fresh cases arose but with less frequency On June 6th, a month after our visit, the schoolmaster wrote saying that the attendance officer had not heard of any fresh cases and that he himself had only noticed two cases recently Dr Peck informs me that he saw two cases on June 7th which were then subsiding Since that date he has neither seen nor heard of any others *I feel that much is due to Dr Peck for recognising* the seriousness of the epidemic and for the promptitude with which he aided in the adoption of measures for its eradication

Sheffield

THE PREVALENCE OF CANCER AND ITS INCREASE

BY W ROGER WILLIAMS, F R C S ENG

IT *is stated that as the result of its investigation into this* matter the Imperial Cancer Research Fund has come to the conclusion that the data upon which the mortality statistics are based indicate that there has been no real increase of cancer As I believe this conclusion is entirely erroneous I now propose to challenge it with a direct negative and in support of this position I beg to submit the following evidence which, after weighing the subject in all its bearings, seems to me to be absolutely conclusive

PRELIMINARY REVIEW

In the course of organic evolution some types of disease—like species—have diminished and become extinct while others have increased and become more prevalent In comparatively recent times plague, typhus fever, leprosy, malaria scurvy, and dysentery have almost or quite disappeared from our country small pox and other zymotic diseases have greatly diminished while phthisis and other tuberculous affections are decidedly on the wane On the other hand, a small group of maladies, of which cancer is the chief, have steadily increased, and this in spite of progressive diminution in the general death-rate Of the other members of this group insanity, suicide, alcoholism, and diabetes are the chief, while to these may be added diseases of the circulatory system, premature births, and congenital deformities Coincidently with these changes the population has slowly increased, *having hardly doubled in 65 years During the period from* 1840–1901 the cancer mortality has increased nearly five-fold—viz , from 177 per 1,000,000 living to 842 In all modern civilised communities a similar tendency is noticeable, especially as regards cancer, the incidence of the malady doubling in frequency in periods of from 20 to 30 years This tendency seems to be of comparatively recent origin At any rate, cancer is a disease of great antiquity and is known to have existed from the most remote times of which we have any record The "Papyrus Ebers," which is believed to have been written about 1550 B C , contains a short section on malignant and other tumours, from which it may be inferred that the cardinal features of these maladies were then well recognised In the works of Hippocrates—who is supposed to have flourished during the latter part of the fifth century B C —malignant and other tumours are referred to In the somewhat detailed enumeration of the *various maladies prone to occur at the different periods of life* which is embodied in the Aphorisms" no mention is, however, made of cancer From this omission and from the comparative paucity of the references to cancer in the Hippocratic writings I conclude that this affection must then have been comparatively rare We have but little trustworthy information as to the prevalence of cancer in England during the Middle Ages and at earlier periods, yet it is probable that it was then of much less frequent occurrence than in recent times The exceptionally well-kept registers of Market Deeping (Lincolnshire) during the years 1711 to 1723, in a total of 387 deaths, show only two from cancer (one male and one female)

STATISTICAL SUMMARY

In the very earliest years of registration, before the enumerating machinery had been perfected the data elicited may have left something to be desired We will therefore commence our study with the year 1840 when the national statistics, under the able guidance of William Farr, had already acquired well deserved reputation for reliability In that year 2786 persons died from malignant disease in England and Wales, the proportion being 1 in 5646 of the total population, 1 in 129 of the total mortality, or 177 per 1,000 000 living In 1901 the deaths due to this cause numbered 27 487 being 1 in 1186 of the total population, 1 in 20 of the total mortality, or 842 per 1,000 000 living In this respect the position occupied by malignant disease is unique, for no other malady can show *such a great increase Whatever the etiological factors of* cancer may be it is thus evident that they are not constant in action and if capable of exacerbation in some circumstances they may be amenable to diminution in others In further illustration of this subject I have compiled the following table which shows the decennial increments of increase during the long succession of years

Year	Total population	Total deaths	Cancer deaths	Cancer death rate per 1 000 000 living	Proportion to population	Proportion to total deaths.
1840	15 730 813	359 687	2 786	177	1 to 5646	1 to 129
1850	17,773 324	368,995	4 966	279	1 „ 3579	1 „ 74
1860	19 902,713	422 721	6,827	343	1 „ 2915	1 „ 62
1870	22,501 316	515 329	9 530	424	1 „ 2361	1 „ 54
1880	25 714 288	528 624	13 210	502	1 „ 1946	1 „ 40
1890	28 762 287	562,248	19 433	676	1 „ 1480	1 „ 28
1900	32,261 013	587 830	26,731	828	1 „ 1207	1 „ 22

THE REALITY OF THE INCREASE

With these figures before us, *and all that they imply,* there can be no doubt as to the reality of the increase in the cancer mortality Yet this has been called in question The earliest objectors ascribed the registered augmentation to mere increase of population, but the futility of this quibble is demonstrated by the fact that while the population has barely doubled (1850–1900) the cancer mortality has trebled Next the attempt was made to explain the increase as due to the average age of the population having advanced and the consequent liability of greater numbers To this the answer is that the saving life in modern times has mainly been confined to the pre cancerous years of existence, the death rates of males over 35 and of females over 45 having remained almost stationary, while the numbers attaining old age has decreased. Hence, only an infinitesimal fraction of the increased cancer mortality can be thus accounted for. Moreover, an increase in the cancer mortality is by no means a necessary corollary of the survival of augmented numbers to the cancer age, as the Irish mortality statistics show. Another objection to the reality of the increase in cancer has been raised by Dr. A. Newsholme and his followers. They maintain that the registered increase is only apparent, being due to improved diagnosis and more careful death certification. There is, however, far too much uniformity in the steadily progressive increments of increase during the long succession of years to furnish any warrant for such a suggestion, while taken in its entirety the increase is so enormous as to make this explanation seem quite far-fetched. Moreover, if improved diagnosis and death certification have caused additions to the cancer total—which I do not deny—these same conditions have also caused subtractions from it. Thus, as the Registrar-General tells us in his fifty-fifth report, even up to the year 1880 such common diseases as "fibroid tumour," "polypus," and "lupus" were usually classed as cancer. In like manner many other morbid states formerly often regarded as cancerous are now relegated to other categories. It is hardly likely then that there is any validity in Dr. Newsholme's contention which, as I will now proceed to show, is—in its main contention—a statistical sophism, based upon fallacious figures as well as upon fallacious reasoning.

It is claimed that there has been no increase in the registered cancer mortality for those parts of the body in which the disease is readily "accessible" and therefore presumably easy of diagnosis, such as the uterus, the mamma, the tongue, the mouth, &c., whereas in "inaccessible" localities, such as the stomach, the liver, and the intestines, where diagnosis is presumed to be difficult, the increase is very marked. It is maintained that the greater increase of the male as compared with the female mortality may thus be accounted for, owing to the incidence of the disease in men being of preponderant frequency in so-called "inaccessible" localities. In support of this hypothesis reference is made to some data derived from the Scottish Widows' Life Assurance Society and to mortality statistics of Frankfort, but, as Dr. J. F. Payne[1] has pointed out, these seem to be a very inadequate basis on which to raise such a superstructure. Before accepting any such conclusion we must inquire whether similar results are arrived at in larger populations and under more representative conditions. In the report of the Registrar-General for 1889 a table is given with the object of determining this very question by analysing a certain representative selection of the deaths from cancer during the years 1868 and 1888 respectively. The results thus obtained with regard to localisation may be epitomised as follows:—

MALES.

Per 100 deaths from malignant disease.

	1868.	1888.
Stomach	35·3	24·0
Liver	12·0	14·9
Tongue and mouth	8·0	7·2
Rectum	7·3	8·9
Face	6·3	3·2
Intestine (ex rectum)	4·0	6·6
Pharynx, tonsil, &c.	2·5	1·9
Lip	2·2	2·0
Bladder	2·1	3·1
Extremities (upper and lower)...	2·1	2·0
Penis, testis, and scrotum	2·0	1·6
Jaws	1·7	2·9
Œsophagus	1·8	4·9
Abdomen	1·5	2·7
Prostate	0·6	*Nil*
Mamma...	0·2	0·2
	90·1	86·1
All others	9·9	13·9
	100·0	100·0

FEMALES.

Per 100 deaths from malignant disease.

	1868.	1888.
Uterus	38·0	31·4
Mamma	24·2	18·3
Stomach	11·9	11·9
Liver and gall-bladder	6·4	12·7
Rectum	3·7	4·8
Intestine (ex rectum)	2·1	5·3
Abdomen	1·7	2·8
Tongue and mouth	1·5	0·7
Face	1·5	1·2
Pharynx and tonsil	1·0	0·7
Extremities (upper and lower)	1·0	0·6
Œsophagus... ...	0·7	1·3
Jaws	0·7	0·6
Bladder	0·6	0·8
	95·0	93·1
All others	5·0	6·9
	100·0	100·0

The net result of this inquiry was to show that the increase of the disease had not been confined to one or to some few parts of the body but that it had involved them all. It is specially noticeable that cancer of the stomach, the chief representative of the "inaccessible" group, shows less relative augmentation, especially in males, than any other local variety of the disease; and—in both sexes—the death-rates from this form of cancer show less increase than those for cancer in general. Thus, in 1868 the death-rate for cancer of the stomach per 1,000,000 living, 35 years old and upwards, was—for males 283·65 and for females 193·45, whereas in 1888 the figures were—for males 346·15 and for females 277·75. Thus, the increase for males in the 20 years was 22 per cent. and for females 44 per cent., but during the same period the death-rate for cancer in general increased 50 per cent. So far, therefore, as this analysis goes Dr. Newsholme's postulates are shown to be untenable. Since the year 1897 Dr. J. F. W. Tatham has introduced into the Registrar-General's annual reports a table showing the localisation of the disease for each year. Analysis of these tables for the years 1897 and 1900 respectively gives the following results:—

MALES.

Per 100 deaths from malignant disease.

	1897.	1900.
Stomach...	20·6	20·5
Liver	14·2	13·9
Rectum	8·6	9 0
Tongue and mouth	6·3	6·8
Intestine (ex rectum)	6·3	7·0
Œsophagus	5·7	5·4
Bladder	3·3	2·8
Jaws	3·0	2·3
Neck	2·7	2·3
Pharynx, tonsils, &c.	2·3	2·2
Larynx and trachea	1·8	2 0
Testis and penis .	1·5	1·5
	76·3	75·7
All others	23·7	24·3
	100 0	100·0

FEMALES.

Per 100 deaths from malignant disease.

	1897.	1900.
Uterus	23·5	22·5
Breast	15·5	15·8
Stomach	11·3	13·8
Liver	13·2	14·3
Rectum	5·2	5·2
Intestine (ex rectum)	5·2	5·7
Ovary	1·7	1·7
Œsophagus... ...	1·4	1·3
Tongue and mouth...	1·3	0 6
Bladder	0·8	0·9
Jaws	0·6	0·6
Neck	0·6	0·5
	82·3	82·9
All others	17·7	17·1
	100 0	100·0

The general tenour of the results manifested in this table accords with that shown in the preceding one. The proportionate localisation ratios show that there has been no special increase in the "inaccessible" manifestations of the disease; and this is specially noticeable in such organs as the stomach and liver, which comprise the great majority of this form of the disease. Here again, then, Dr. Newsholme's hypothesis is shown to be devoid of solid foundation. Further confutation of this hypothesis comes from the work of Dr. Claud Muirhead, the medical officer of the Scottish Widows' Life Assurance Society,[2] who finds that the cancer death-rate among the assured males was nearly twice as great in 1881–90 as it was in 1861–70. In a society of this kind, the members of which can command the services of highly skilled medical men, it is hardly likely that such a great increase could be due to improved diagnosis and death certification, especially as every death where there was a suspicion of cancer, was carefully investigated. "I think it is evident," says Dr. Muirhead, "that the theory that this large increase was wholly, or even largely, caused by sudden increase of diagnostic skill among the class of medical men who certify causes of death to this Society, is untenable." This contention is fully endorsed by an examination of the localisation ratios in 512 fatal cases in which the exact site of the disease was specified. From this it appears that the deaths from malignant disease of "inaccessible" parts (stomach, liver, &c.) *decreased* by 7·70 per cent. from 1874–80 to 1888–94, and the results thus obtained by comparing the percentages of actual deaths were entirely in accord with those arrived at by comparing the respective death-rates. Thus the reality of the increase of the disease among the members of this society was clearly demonstrated.

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[1] THE LANCET, Sept. 16th, 1899, p 765.

[2] The Causes of Death among the Assured in the Scottish Widows' Life Assurance Society, p. 13. Edinburgh, 1902.

Another consideration of similar import is that the increased cancer mortality has been diffused all over the country instead of being limited to certain areas only, so that those localities which formerly had the highest, lowest, and average cancer death rates still preserve their distinction in this respect, although the cancer mortality has everywhere augmented Taking all these facts into consideration there can, then, be no doubt as to the reality of the increase in the cancer mortality

THE DISPROPORTIONATE INCREASE AMONG MEN

The Registrar General's annual reports show that more women die from malignant disease than men and this has been the case ever since these reports were first issued (1837) In the year 1900 this disease was fatal to 16,246 females and to 10,475 males, for females the death-rate was 975 per 1,000,000 living of that sex and for males 672 In other words, 1 in 15 of all men and 1 in 9 of all women 35 years old and upwards eventually died of cancer The cancer mortality among males in that year exceeded the decennial average for the male sex by 16 per cent and among females by 10 per cent Attention is thus drawn to the remarkable fact that the increasing cancer mortality is affecting, and for many years has affected, males to a much greater extent than females. The difference between the sexes in respect to their proclivity to malignant disease has thus been steadily diminishing ever since 1850, as is shown by the following table:—

Table showing the Relative Increase of Malignant Disease among Males and Females

Period	Male cancer death rate	Female cancer death rate	Sex ratio
1851 to 1860	195	434	1 to 2 2
1861 ,, 1870 ..	244	523	1 ,, 2 1
1871 ,, 1880	315	622	1 , 1 9
1881 ,, 1890	430	739	1 1 7
1891 ,, 1900	597	903	1 , 1 5

It thus appears that although there has been a great increase of malignant disease in both sexes during the last half century and although at the present time more women are affected than men yet the malady has augmented much more rapidly among the latter (206 per cent) than among the former (108 per cent) Moreover, it is noticeable that the average age of English women is higher than that of men, so that the death-rates as given above are unduly favourable to the female sex It seems likely if this disproportionate increase of cancer among males be not checked that the disease will soon be as prevalent among men as among women or the comparative proclivity of the sexes in this respect may be reversed, as has already happened in a few countries The greater prevalence of malignant disease among women is entirely due to the frequency with which, in them, the mammæ and uterus are affected, the corresponding structures in males very rarely originating the disease, while in all other localities the male liability is the greater Here it may be noted that the comparative proclivity of women to non malignant tumours and cysts is even more considerable than it is to cancer, and this also arises from the fact that in them the reproductive organs, especially the uterus and ovaries, very frequently originate tumours of this kind, whereas the corresponding male organs are seldom affected Another point worthy of notice in this connexion is that for both sexes the percentage of cancer deaths at ages above 45 is greater than it used to se in the male cancer mor- ssive incidence of the disease

If, now, we ask what is the cause of this disproportionate increase of cancer among men? Newsholme, De Bovis, and others reply. There has been no real increase, but the apparent augmentation is due to improved diagnosis and death certification, owing to the majority of cancers in men being of the "inaccessible" variety, which is difficult to discriminate. As I have in the foregoing remarks fully exposed the fallaciousness of this hypothesis I need not further revert to the matter here

It seems to me probable that this undue incidence of the increasing cancer mortality in men may be ascribed to the fact that of late, *as the result of urbanisation*, the conditions of life for men have come to resemble more closely those for women than heretofore It is undeniable that urbanisation has affected far more profoundly the natural life of men—altering, modifying, and suppressing their ancestral habits, than it has the natural life of women Out of these conditions, which comprise more domesticated surroundings, want of proper exercise and excess of food I believe the present increased cancer mortality has sprung

Clifton, Bristol

PARALYSIS FROM LESION OF THE UPPER PART OF THE BRACHIAL PLEXUS.

BY R T WILLIAMSON, M D, F R C P LOND,
PHYSICIAN TO ANCOATS HOSPITAL AND ASSISTANT PHYSICIAN TO THE ROYAL INFIRMARY, MANCHESTER

Two forms of combined paralysis of muscles of the arm from lesions of the nerve roots of the brachial plexus are well known In one form, Erb's paralysis (or the upper arm form), the muscles paralysed are the deltoid, biceps, brachialis anticus, and supinator longus; sometimes also the supinator brevis, the infraspinatus, and the subscapularis In the other well known form, the lower arm form (or Klumpke's paralysis), the muscles paralysed are the small muscles of the hand and the flexors of the fingers and wrist The two cases here recorded are examples of a third form of paralysis of arm muscles in which there is paralysis of all the muscles affected in Erb's paralysis and, in addition, of the triceps and of the extensor muscles of the wrist and fingers The following is a brief abstract of the notes of these cases

CASE 1—A woman, aged 50 years, was knocked down by a bicycle whilst walking in the street In the fall the right shoulder came in contact with the ground About five or ten minutes afterwards she noticed loss of power in the right arm When first seen, four days after the accident, the following muscles were paralysed in the right arm the deltoid, biceps, brachialis anticus, supinator longus, triceps, and extensors of the wrist and fingers. The flexors of the fingers and wrist and the small muscles of the hand were unaffected The pectorals and the trapezius and the latissimus dorsi contracted quite well There was difficulty in rotating the humerus outwards and in writing (especially towards the end of the line) Probably the infraspinatus was also paralysed. Sensation was carefully examined but no change to any form of sensibility could be detected either in the sensory distribution of the fifth, sixth, and seventh cervical nerve roots or in any other part of the arm Electrical examination a few days later showed that the complete reaction of degeneration was absent in the affected muscles The direct application of the weak faradic current to the paralysed muscles ad extensors o ntraction in all, these muscles on the left side To galvanism (direct application to the muscles) all the muscles just mentioned contracted fairly well and the contractions were sharp as in the normal condition—"normal lightning contraction" Also the K C C. was greater than A C C Indirect stimulation of the right deltoid, biceps, and supinator longus through application of the weak faradic current to the combined fifth and sixth cervical nerve roots at Erb's point in the posterior triangle of the neck caused a well-marked contraction of the muscles Galvanic stimulation of the same nerve roots caused contraction of the muscles just mentioned and the K C C was greater than A C C Four weeks after the accident the deltoid and supinator longus were still completely paralysed, on attempting voluntary movements the biceps, triceps, and the extensors of the fingers and wrist contracted slightly but the loss of power in these muscles was still very marked Seven weeks after the accident there was marked improvement In course of time complete recovery occurred There was no swelling or tenderness in the posterior triangle of the neck and there were no other symptoms of lesion of the nervous system Treatment was as follows galvanism (stabile method) was commenced three weeks after the onset of the paralysis There was a daily application of the current for ten minutes

CASE 2—The patient was a boy, aged one year and eight *months One month before attending the hospital the child* was suddenly lifted up by the left arm from the floor. A few minutes afterwards there was pain in the left arm and a few days later it was noticed that the left arm was helpless. On examination the following muscles of the left arm were found to be paralysed completely: the deltoid, biceps, brachialis anticus, supinator longus, triceps, and the extensors of the wrist and fingers. The flexors of the wrist and fingers and the small muscles of the hand were unaffected. There did not appear to be any affection of sensation but owing to the early age of the patient and to his restlessness it was not possible to test sensation very accurately or to take the electrical reactions. Five months later when again examined the paralysis was unaltered. Electrical treatment had been recommended but the mother had brought the child for treatment on one occasion only.

In Erb's paralysis the lesion affects the nerve trunk formed by the union of the fifth and sixth cervical nerve roots (the "upper trunk" of the brachial plexus). In Klumpke's paralysis the lesion affects the eighth cervical and first dorsal nerve roots or the nerve trunk formed by their union ("lower trunk"). In the form of paralysis presented by the two cases just described the same muscles were paralysed as in Erb's paralysis—viz., the deltoid, biceps, brachialis anticus, and supinator longus—but in addition there was paralysis of the triceps and the extensors of the wrist and fingers. By many writers on spinal localisation the triceps and the extensors of the wrist and fingers are stated to be supplied by the seventh cervical nerve root.[1] If this localisation of motor functions be correct the paralysis in the two cases here described could be explained by a lesion affecting either the upper *cord* of the brachial plexus formed by the union of the fifth, sixth, and seventh cervical nerve roots or all those nerve roots separately before their union. The causation of the paralysis is probably similar to that in many cases of Erb's paralysis: compression or laceration of the nerve cord or roots between the clavicle and the posterior part of the first rib, owing to the clavicle being pushed or drawn suddenly upwards and backward at the time when the accident occurred.[2]

Manchester.

A CASE OF ANTERIOR DISLOCATION OF THE SEMILUNAR BONE OF THE WRIST.

BY ERNEST W. HEY GROVES, M.D., B.Sc. LOND.,
ASSISTANT SURGEON TO THE BRISTOL GENERAL HOSPITAL.

CASES in which single bones of the carpus become dislocated are sufficiently rare to justify the publication of the following.

A muscular man, aged 26 years, fell off a ladder whilst gathering walnuts and alighted on the ground, a distance of about 15 feet, striking his right hand and right hip. He thought that he fell on the outstretched palm of the hand. He was sent by Mr. W. Monckton of Portishead to the Bristol General Hospital where I saw him about 20 hours after the accident. The right wrist-joint was swollen and very painful but there was no marked deformity. Both styloid processes were felt in their normal relations. In front of the wrist at the level of the radial styloid process a prominent bony projection could easily be felt. On manipulation no crepitus occurred. Considerable traction could be made on the hand without much pain, showing that there was no injury of the lateral ligaments or fibro-cartilage. Pronation could be carried out but supernation was painful. Flexion of the wrist or fingers was impossible without great pain. Careful measurements from the most prominent points of the styloid processes of the radius and ulnar to the first and fifth metacarpo-phalangeal joint respectively gave about 0·5 centimetre shortening on the affected side. Viewed by the x rays the carpus was seen to be shortened and the proximal row of bones threw an indistinct shadow when viewed from in front or behind. The radius and ulnar were quite normal. When seen from the radial side a projecting shadow of a square bone was cast just in front of the lower end of the radius. Under ether the above points could be made out more distinctly and also the fact that a soft recess occurred just below the line of the wrist-joint on the dorsum and it was evident that the injury consisted in an anterior dislocation of the semilunar bone. Strong traction was made on the hand and the displaced bone was firmly pressed backwards. After one or two ineffectual attempts, the bone slipped back and the hollow on the dorsum of the wrist at once disappeared.

In the rare event of a single carpal bone being dislocated, the dislocation is almost always backwards and affects the os magnum. This is probably due to the fact that the os magnum occupies a central position in the carpus and is wedge-shaped with the base of the wedge on the dorsum. The semilunar is also rather wedge-shaped, but the base of the wedge is towards the palmar aspect and therefore it is that when a violent blow on the wrist crowds together the carpal bones and displaces the semilunar, this bone is forced forwards. Nevertheless, I cannot find any record of the anterior displacement of a single carpal bone and therefore I thought the above case was worthy of record.

Clifton.

A CASE OF SLOUGHING PANCREAS; DEATH FROM SECONDARY HÆMORRHAGE.

BY W. H. BROWN, F.R.C.S. IREL.,
HONORARY SURGEON TO THE LEEDS INFIRMARY.

THE patient, a man, aged 52 years, was quite well up to November last when he had an attack of violent pain at the epigastrium followed by vomiting. A day or two later he became jaundiced and remained so for about six weeks. He had never felt quite well since his first attack of pain and had lost four stones in weight. His present condition was as follows. He looked ill and worn, there was a large fluctuating swelling at the left side of the epigastrium, and he complained of great pain when any pressure was made on the tumour. He also complained of acute pain over the spine of the left scapula. The swelling had not been noticed prior to my seeing him. After consultation with Dr. T. Churton it was decided that an operation was urgently needed.

On the next day under ether I cut down upon the swelling and found it to be a cyst in connexion with the pancreas. About three pints of fluid escaped. The cyst came forward over the upper border of the stomach, not between the stomach and the colon. A large rubber drainage tube was inserted. The fluid was found to contain pancreatic secretion. Dr. P. J. Cammidge's tests were made for me by Dr. O. C. Gruner and suggested malignant disease. The urine tested *before* the operation contained neither sugar nor albumin. The patient made good progress for ten days, the pain all went, and about 12 ounces of fluid were drained off each day. On the tenth day the tube came out and could not be replaced, the temperature ran up to 105° F., and a hæmorrhage took place which exhausted the patient rapidly. Transfusion of saline solution failed to revive him and he sank within 12 hours of the hæmorrhage. I was enabled to obtain the parts immediately concerned but not to make a post-mortem examination as usually understood.

On introducing the hand the viscera in the upper zone of the abdomen were matted together and adherent to the abdominal wall. There was an opening about three-quarters of an inch in diameter through the lesser omentum and the lesser sac was occupied by non-offensive, dirty-brown material, together with recent blood clot. There was a large quantity of free blood in the peritoneal cavity. The stomach, duodenum, and pancreas were removed *en masse* for further examination. On turning the attention to the pancreas that organ was found to be replaced for the most part by soft, black, necrotic-looking tissue. There was no healthy pancreatic tissue left. The extreme tail of the organ was least affected and the nature of the tissue here could be quickly recognised, but even this was considerably decayed. The lesser sac was occupied by soft brown débris, evidently of pancreatic origin. On the great omentum and on the mesentery were several light yellow and white areas of fat necrosis The spleen was very large and its substance was soft, otherwise it was normal The liver and bile passages were normal, there were no gall stones

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[1] Sir V. A. H. Horsley: Article on Diseases of the Vertebral Column, [illegible] Palsies, Professor Clifford Allbutt's [illegible]d., 1899. Dr. C. E. Beevor: Diseases of [illegible]

[2] [illegible] of Paralysis of Muscles of the Upper Extremity of Peripheral Origin, with special Reference to their Causation, THE LANCET, Dec. 11th, 1897, p. 1522.

This is the third case of pancreatic cyst upon which I have operated the former two were traumatic and recovered The points of importance appear to be the obscure origin of the disease the rapid loss of flesh that took place without the presence of malignant disease, and the intensity of the pain over the shoulder which entirely disappeared when the patient came round from ether It is an interesting fact that the tests of Dr Cammidge carried out by an expert resulted in a refutation of the statement that with certain reaction new growth will be found I have thrice before met with cases in which profuse hæmorrhage occurred without obvious cause and in each case there was evidence of inflammatory changes in the pancreas

Leeds

A Mirror

OF

HOSPITAL PRACTICE,

BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias tum aliorum tum proprias collectas habere et inter se comparare —MORGAGNI *De Sed et Caus Morb* lib iv, Proœmium

WESTMINSTER HOSPITAL

A CASE OF ULCERATIVE COLITIS

(Under the care of Dr W MURRELL)

A MAN, aged 64 years, was admitted into Westminster Hospital on May 28th suffering from ulcerative colitis He was born in England his father was an Englishman and his mother a native of Calcutta When a few months old he was taken to India and remained there until the age of 36 years when he returned home Whilst in India his health was perfect and he had neither diarrhœa nor dysentery About ten years ago he developed a chronic and intermittent diarrhœa which during the past 12 months had been accentuated, the bowels as a rule acting four times in the day and five times at night He had attended as an out patient for nearly a year but the diarrhœa continued with unabated severity in spite of much treatment He had been steadily
months There were

On admission and fo
ture was elevated, varying from 99 4° to 101 8° F There were usually from five to seven motions in the 24 hours, the stools being fluid fairly copious slimy free from blood, and not offensive There was no vomiting There was hyperæsthesia on deep palpation all over the abdomen The tongue was clean and moist

The patient was dieted and given acetate of lead and other astringents but without benefit and his general condition was unsatisfactory From June 5th to 9th inclusive he had 23 motions On the 10th after a preliminary enema of boric acid eight grains to the pint he was given by means of an irrigation tube of small diameter a rectal injection of a 1 per cent aqueous solution of argyrol at a temperature of 80° When about five pints had been introduced, the patient being in the knee and elbow position attention was called to the fact that a claret-coloured odourless fluid was pouring out of his mouth, a fluid identical in colour and appearance with that in process of injection into the rectum The time from the commencement of the injection was four minutes There was some nausea but no retching or vomiting and the fluid as it flowed from the mouth was received into a clean white porring
A suggestion being made that it was altered blood it
examined both microscopically and by the usual tests
no blood was present It was examined for bile and ag
with a negative result The patient had taken nothing in the way of food but some tea early in the morning and subsequently a little milk and bread and butter The specimen was then sent to Dr Wilson Hake at the Westminster Hospital Medical School who after complete analysis, reported that it was a solution of silver not differing apparently from a 1 per cent argyrol solution with which it was compared

The patient seemed none the worse for the injection and had a fairly good dinner On the following day he had only three motions and on June 12th the same number The temperature was normal on the 11th but on the 12th it rose to 102 4° falling again in a few hours to normal From this time there was no return of the diarrhœa the bowels never being opened more than once a day As a matter of precaution the injection was repeated on the 14th and 16th but there was no repetition of the regurgitation of fluid from the mouth In a few days the patient was able to take meat potatoes and green vegetables, he rapidly regained weight and on July 6th was discharged well

Remarks by Dr MURRELL —The foregoing case illustrates (1) the curative effect of an injection of argyrol into the bowel in a case of ulcerative colitis, and (2) the fact that a fluid introduced into the rectum may be discharged unaltered by the mouth This case should be read in conjunction with the five cases of ulcerative colitis published in THE LANCET of March 12th, 1904, four of which terminated fatally It was there stated that with the exception of injections of silver almost every drug or combination of drugs had been tried and that they all failed It would be unwise to jump at a conclusion from the experience of a single case but it looks as if argyrol had solved the difficulty This salt is a chemical combination of silver with synthetic vitellin and contains 30 per cent of silver The evacuation of a substance injected into the rectum in so short a period as four minutes is noteworthy There is no doubt about the fact for the fluid was seen running out of the mouth and Dr Wilson Hake's careful analysis is conclusive It may be suggested that there was a short circuit between the rectum and the stomach but there was nothing pointing to the existence of so abnormal a condition The occasional *vomiting of enemata* by hysterical and other patients is not unknown and many cases are recorded

Many years ago Nothnagel reported as the result of a series of experiments that anti peristalsis never occurred in the normal uninjured intestine if
were brought to bear on it The
the injection into the rectum of
carmine post mortem examination showing whether they had been carried higher by any movement of the intestine itself The best results were obtained with from three to five cubic centimetres of a strong solution of chloride of sodium, but the staining never reached farther than the cæcum Angeraut, in a thesis published in Paris in 1894, affirmed as the result of experimental investigations that the ileo cæcal valve did not always present the adequacy attributed to it by anatomists and that it might be permeated by fluids introduced into the rectum Coutani has recorded two cases in which after injections of large quantities of olive oil into the rectum for the relief of constipation the patients were seized with eructations and vomiting the vomited matter containing oil Jaccoud mentions the case of a hysterical young woman who from time to time vomited motions which were formed cylindrical brown in colour and of characteristic odour Fully realising the deception often practised by such patients every possible precaution was taken but the phenomenon continued Ten days later the patient contracted enteric fever, dying in the third week but at the necropsy no anatomical peculiarity was detected there being nothing observable but the characteristic lesions of the disease Briguet reports a case in which an enema of coffee was vomited a quarter of an hour after its administration Experimentally an injection was given of a fluid coloured blue with tincture of litmus and in 12 minutes it was rejected by the mouth having been turned red by the acid of the gastric juice In a similar manner a saline injection was evacuated by the mouth and gave the usual reaction with nitrate of silver He mentions a case in which an injection of 150 grammes of almond emulsion containing ten minims of tincture of opium, was vomited in half an hour, the patient distinctly recognising the taste of the laudanum
imes rejected by the mouth
a girl, aged 12 years, who
introduced into the rectum
Pater noster et un *Ave Maria*
A second suppository secured by a thread was then introduced, but the reverse peristalsis was sufficiently strong to break the cord and the suppository was vomited with the fragments of thread attached A third suppository was

tried, secured by four strong ligatures, but the result was the same. Several similar cases are recorded in Dr. A. P. Gros's "Traitement de certaines Maladies de l'Estomac."

SUSSEX COUNTY HOSPITAL.

A CASE OF CEREBRAL HÆMORRHAGE WITH ARRESTED RESPIRATION FOR 18½ HOURS.

(Under the care of Dr. E. MACKEY.)

FOR the notes of the case we are indebted to Dr. T. Barrett Heggs, house physician.

A man, aged 23 years, was admitted into Sussex County Hospital under the care of Dr. Mackey on July 20th, 1903, with violent headache. The family history was *nil.* There was a strong hereditary tendency of tubercle in his uncles, aunts, and cousins, but in no nearer relative. He denied having had syphilis. He had had pneumonia in 1899. He dated his present illness back to October, 1901. When in the mounted infantry in South Africa he was thrown from a horse at Spitzkop, was concussed, and received a scalp wound. No symptoms followed till March, 1903 (18 months after the accident), when frontal and occipital headache came on each day and often prevented sleep at night. He was faint, sick, and giddy, and often vomited with headache. For two months he had been unsteady in walking and his knees gave way.

On admission the pulse was 80 and the respirations were 20. The patient's appearance was normal. There was no tenderness or depression in the skull. His mental capacity was rather subnormal and he was slow of speech. The headache generally came on in the early morning, sometimes passing from the forehead across the vertex to the occiput; at others it was constant in the frontal and occipital regions. His gait was ataxic and reeling and he fell to either side but more to the right. Romberg's sign was positive even with the eyes open. The pupils were dilated equally, reacting to light and to accommodation. There was no paresis or nystagmus. There was a small patch on the inner margin of the right optic disc, probably congenital in origin. No sign of optic neuritis was present (Mr. W. W. Griffin). The organic reflexes were normal. The knee-jerks were slightly exaggerated on both sides. There was no patellar clonus. Ankle clonus was present on both sides, more sometimes in one than the other. The plantar reflex was present, sensation was normal, power was good, and there was no Babinski reflex. Coördination in the arms was slightly imperfect and was worse in the left arm, but power was good and sensation was normal. The wrist and triceps jerks were normal. The pulse was small, regular in force and rhythm, and normal in tension. There was an occasional reduplicated first sound of the heart, otherwise that organ was normal. The symptoms improved much for a time, but from August 26th the headache became gradually worse, generally appearing between 3 and 5 A.M. and often followed within an hour or so by vomiting. The vomiting sometimes followed walking about more than usual. The fundi still showed absence of optic neuritis. The temperature was continually subnormal (from 97·4° to 98·2° F.). The treatment internally was iodine—first as the syrup of hydriodic acid and later as iodide of potassium in 20-grain doses three times a day, also antipyrin, bromide, and cannabis indica as required. During the night of the 26th the headache was very bad. He vomited at 3.30 A.M. The headache, relieved by a powder for a time, recurred later in the morning and sinapisms were applied to the nape of the neck. At 1.40 P.M. Dr. Mackey was called to see the patient. He found him lying with eyes open and fixed, equally dilated pupils and not reacting to light, and insensitive corneæ. The face was grey and cyanosed and there was slight twitching of the jaw but no other movement. There was no attempt at respiration made (no moisture was deposited on a mirror). The pulse was irregular but otherwise very fair. The patient was quite warm. All the muscles were quite flaccid. Artificial respiration was begun and sufficient respiration could be maintained by rhythmical compression of the chest. In a short time the patient regained a good colour and the pulse improved. Artificial respiration was discontinued for 15 minutes and the patient became cyanosed and the pulse irregular. On resuming artificial respiration the colour and pulse improved. Oxygen was tried with no effect. Ether and strychnine were injected. Amyl nitrite was given but still no attempt at respiration was made. The faradic current applied with a pole on the nape of the neck and the other over the brachial plexus produced contraction of the extraordinary muscles of respiration and it was possible to keep up artificial respiration by this contraction and as the muscles failed to respond compression of the chest was resumed. Still the pulse was very fair but at times irregular.

A surgical consultation discountenanced trephining, since absence of stertor was taken to indicate absence of brain pressure. Lumbar puncture was performed at 6.15 P.M. and four drachms of clear cerebro-spinal fluid were drawn off (bacteriological examination failed to find any abnormality in it), after which the pulse improved but the general condition remained the same. An attempt to pass a catheter caused erection of the penis. Nutrient enemata were given every four hours. Artificial respiration was continued all night. Ether and strychnine were given hypodermically as required more and more frequently. Mercurial inunction was carried out. 12 ounces of saline solution were injected per rectum at 9.20 P.M.; this was retained; when repeated at 6.30 A.M. it was returned. The pulse ceased at 8.15 A.M. on August 28th, 18½ hours after the respiration ceased.

Necropsy.—To the naked eye there was no sign of tubercle in the body. The organs were normal, as were also the cranial bones and the spine. The cerebral membranes, sinuses, and arteries were normal. There was no meningitis. No tubercles were present on the meninges There was an excess of cerebro-spinal fluid. The ventricles were not over-distended. The medulla and upper cord were normal. The lower cord was not examined. At the outer side and upper aspect of the right hemisphere of the cerebellum an old blood-clot half an inch in diameter was found lying just under the surface; also a more recent small hæmorrhage in the left lobe of the pons. A section of this portion on microscopical examination showed thrombosis of some of the larger vessels with commencing organisation of the clot. The surrounding cerebral substance was degenerated. The most striking features of the section were the periarteritis and the enormous polynuclear giant cells in contact with many of the capillary vessels. (Query, traumatic, specific, or tuberculosis? Either might be followed by thrombosis.)

The second more recent hæmorrhage in the pons was no doubt the cause of the peculiar symptoms and of death. Was the primary hæmorrhage in the cerebellum produced in South Africa 18 months before the onset of symptoms? This seems improbable.

Reviews and Notices of Books.

Introduction à l'Etude Clinique et à la Pratique des Accouchements: Anatomie, Présentations et Positions, Mécanisme, Toucher, Manœuvres, Extraction du Siège, Version, Forceps. By Professor L.-H. FARABEUF and Dr. HENRI VARNIER. Preface by Professor A. PINARD. Illustrations by L.-H. FARABEUF, being with necessary repetitions 362 figures. New edition revised and corrected by Professor L.-H. FARABEUF. Paris: G. Steinheil. Price 15 francs.

THE appearance of a second edition of this well-known work will be welcomed by all obstetricians. The death of Professor Varnier has left the task of revision to Professor Farabeuf. He has embodied all the most recent researches and has rewritten in great part some of the chapters, more especially the one dealing with the application of the forceps to the head lying above the pelvic brim. The increase in the number of operations of symphysiotomy and of Cæsarean section performed in France has caused some alteration in the treatment advocated in this chapter for such cases. The book contains an immense amount of information on all the problems connected with the progress of natural labour. The anatomy of the pelvis and of the fœtus, more especially of its head, is very fully discussed, this is followed by a description of the mechanism of labour in all the different presentations, and then the method of carrying out vaginal examinations and the diagnosis of the various presentations are given in great detail The rest of the work is concerned with the operative delivery of the breech, the treatment of shoulder presentation by version, and the application of the forceps The descriptions are rendered the more valuable in that they are illustrated and confirmed by the numerous researches which the authors have carried out in these various subjects These experiments have been conducted in the most natural manner possible, as they have been practised on the "natural mannequin"—that is to say, on cadavers, mainly those of women dying from eclampsia during the course of, or before, the onset of labour and in whom the natural passages were still in good condition and dilatable These experimental studies have been controlled by laboratory researches on frozen sections of the bodies of women who died during pregnancy or during labour and by clinical observations in the clinique of Professor Pinard The outcome of the authors' studies—viz, this volume—is of the highest possible merit and forms a most valuable memorial of the late Professor Varnier, to whom a great deal of the credit is due The book is one of the most important modern contributions to obstetric literature and will be welcomed in its revised form by all those who are engaged in the study of this branch of medicine. The figures which form so marked a feature of the book, and many of which have found their way into numerous text-books of midwifery, are most admirably drawn and reproduced

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The Pocket Companion to the British Pharmacopœia By PETER WYATT SQUIRE London J and A Churchill 1904 Pp 766

Squire's "Companion to the British Pharmacopœia" has long been known and valued by the members of the medical profession and by all interested in recent advances in pharmacy The present volume is constructed on the same lines and its smaller size is intended to render it more serviceable, it must, however, be admitted that the name of "Pocket Companion" is rather a misnomer, for few medical men with any regard for the fit of their garments would care to find room for this book in addition to the other necessary articles they have to carry about with them It may be a "handy manual" but it is not a pocket companion The author states that he desires to afford information on such matters as are commonly arising in the ordinary course of prescribing and dispensing, while giving notes on improved pharmaceutical processes and criticisms on the official tests which involve a considerable amount of experimental work

The adaptation of material to the smaller setting has been effected with great discrimination The author has retained just those features for which the "Companion" was most frequently consulted by medical men and has exerted judicious compression in many directions Although generally arranged in alphabetical order the divergences from this plan are sufficiently numerous to render indispensable frequent reference to the index and it may at once be stated that the index appears to be very complete By the use of small type for many new remedies, which are comparatively little used, much space has been economised to be devoted to more important amplifications of "Prescribing Notes" It is, perhaps, a sign of the times that the 50 spas in Britain of the larger "Companion" are reduced to nine in the smaller book and that we are spared the long analytical tables relating to the foreign spas. About 30 pages of the "Companion" which dealt with articles employed in chemical testing have also been deleted with advantage, these are of necessity included in the British Pharmacopœia but they were not required in the "Companion" and we are glad not to find them in the "Pocket Companion"

We have tested this volume in many places and we have not noticed any serious omissions in the attempt to include in a small space reference to all noteworthy therapeutic developments The only exceptions are that the author refrains in most instances from ascribing any medicinal properties to many of the drugs included in the Indian and Colonial Addendum to the British Pharmacopœia Dr. R. Tanner Hewlett has rewritten a short section on Therapeutic Agents of Microbial Origin The book concludes with a therapeutical classification of remedies and with a list of remedies employed in special ailments which betray the difficulty inseparable from the attempt to find hints of value under the name of a disease or symptom Thus in seven lines remedies for flatulence are included and the same space is allotted to remedies for typhoid fever, with no indication of the circumstances in which any one of them may be required The author is to be congratulated upon the thoroughly practical value of all that relates to dispensing and prescribing and we must not cavil if on matters of treatment the information is not up to the level of the branch of medicine in which he has personal experience

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Membranous Catarrh of the Intestines By Professor Dr CARL VON NOORDEN, Physician-in-Chief to the City Hospital, Frankfort on-the-Main With the collaboration of Dr CARL DAPPER Bristol John Wright and Co 1903 Pp 64 Price 2*s* 6*d*

THIS volume constitutes Part III of several "Clinical Treatises on the Pathology and Therapy of Disorders of Metabolism and Nutrition" written by Professor von Noorden A very good account is given of the clinical characters of membranous catarrh of the intestines, sometimes called "colica mucosa" The two cardinal signs of the disease are evacuation of mucus and recurring attacks of pain The authors point out that the excreted mucus may assume different types, that it may either be loose and glairy, or that it may be more solid, drier, and formed of strands that are tightly interlaced to form reticulated structures These two types, however, represent extremes and between the two many intermediary transitions are noticed Professor von Noorden considers that the disease is due to the existence of some morbid nervous reflex process brought about by the irritation of the intestinal mucosa by dry hard scybala and upon this assumption the treatment of the malady is founded, The portion of the work devoted to treatment will be found very interesting and as the condition not infrequently proves rebellious to ordinary measures much may be learned from a study of these pages

Professor von Noorden and Dr Dapper divide the treatment into symptomatic and "causal" The object of the former is to suppress the attack as soon and as completely as possible This is necessary in order to relieve the pain and the distress of the patient and so to prevent the deleterious consequences that may follow both in regard to the general nutrition of the sufferer and the whole nervous system To this end rest in bed is indicated and the authors unequivocably advise the administration of narcotics, although some physicians oppose this course Morphine or opium may be given either by hypodermic injection or in the form of suppositories Enemata of oil and water are also recommended The "causal treatment" is described at length. Any treatment of diseases of the digestive tract must in the first place be dietetic and after considerable experience Professor von Noorden is emphatic in recommending a coarse laxative diet consisting of bread containing a large proportion of husks, as great a variety as possible of leguminous plants including the husks, and fruit with small seeds and thick skins, besides large quantities of fat, in particular of butter and bacon. Massage of the large intestine, especially of the sigmoid flexure, is also advised. It is claimed that treatment on the above lines will speedily bring about a complete cure. We have merely given the general outline of the course to be pursued and can recommend our readers to refer to the original work for the details of the daily routine which is necessary in order to bring about the desired effect.

International Clinics. Edited by A. O. J. Kelly, A.M., M.D., Philadelphia, U.S.A. Vol. III. (1903) and Vol. IV. (1904). Thirteenth series. London: J. B. Lippincott Company. Vol. III., pp. 305, price 10*s.* 6*d.*; Vol. IV., pp. 321.

MANY interesting papers are contained in the third volume (thirteenth series) of this well-known publication. There are several good communications on diseases of the gall-bladder and gall-ducts—namely, Some Medical Aspects of the Diseases of the Gall-bladder and Gall-ducts, by Dr. J. H. Musser; the Causation, Symptoms, and Diagnosis of Gall-stones, by Dr. R. D. Rudolph; the Diagnosis and Medical Treatment of Cholelithiasis and Cholecystitis, by Dr. C. G. Stockton; Biliary Cirrhosis of the Liver, with and without Cholelithiasis, by Dr. F. Parkes Weber; the Value of, and Indications for, Surgical Intervention in Cholelithiasis, by Dr. F. Lejars; and the Surgical and Post-operative Treatment of Chronic Gall-stone Disease, by Dr. J. B. Deaver. These form an interesting group of papers dealing with morbid conditions of frequent occurrence the diagnosis and treatment of which have of late years received considerable attention. Dr. Stockton remarks on the occurrence of pericholecystitis in connexion with cholelithiasis, which gives rise to continuous pain and some constitutional disturbance. There is then a localised peritonitis which may extend sufficiently to produce the gravest results, even causing perforation. While in some cases, as the result of ulceration, a passage may be formed between the gall-bladder and the intestine, thus leading to drainage of the gall-bladder, possibly the escape of calculi, and even ultimate cure of the case, it too often happens that a perforation into the peritoneal cavity results from the process, following which a rapid septic peritonitis is to be expected. Another interesting article in this volume is that on Malarial Infections and their Parasitology, Symptomatology, Diagnosis, and Treatment, by Dr. C. F. Craig. The author's remarks on the "mosquito cycle" of the malarial parasites are particularly worthy of note.

Vol. IV. contains many interesting communications on important subjects. Dr. J. Tyson writes on the Clinical Features and Treatment of Ulcer of the Stomach. He rightly draws attention to the operative treatment of this affection. Experience is accumulating showing the good results that have been obtained in those cases which have defied treatment by the ordinary means. Dr. Tyson refers mainly to those instances which have been characterised by the occurrence of severe hæmatemesis. There is, however, another type in which the patient's life is rendered wretched owing to the constant pain and vomiting induced by taking food; in these cases operation has been followed by complete or very great relief. Attention may be drawn to an article by Dr. James Burnett on Angioneurotic Œdema. This is a condition which has not been very generally recognised; it may be defined as a circumscribed swelling associated with changes of sensation in the part affected and occasioned by a vaso-motor neurosis. The site of the swelling may be almost anywhere but the commonest areas involved are the eyelids, lips, cheeks, throat, hands, and feet. Dr. Burnett believes that the source of the affection lies in the medulla. The vaso-motor centre is readily influenced reflexly by sensory nerves but it can act quite automatically —that is, without the intervention of external stimuli. He recognises three clinical varieties: the traumatic, the neurotic, and those cases associated with the menopause. For clinical purposes this classification may be conveniently accepted. The treatment of angioneurotic œdema is similar to that of mild cases of neurasthenia.

Amongst the communications on surgical subjects is one by Mr. W. H. Battle and Mr. E. M. Corner on the Differential Diagnosis of Acute Abdominal Conditions which require Surgical Treatment. Appendicitis naturally at once presents itself to the practitioner's mind when an acute abdominal case is seen. The differential diagnosis in such instances may be most difficult, yet on the diagnosis and line of treatment may depend the patient's life. Mr. Battle and Mr. Corner deal with the subject of diagnosis of acute abdominal conditions in a most able manner and their observations are worthy of careful study. The volume concludes with an admirable *résumé* on the Present State of our Knowledge of Immunity by Dr. J. McFarland.

Text-book of Diseases of the Eye for Students and Practitioners of Medicine. By HOWARD F. HANSELL, A.M., M.D., Professor of Diseases of the Eye, Jefferson Medical College, Philadelphia; and WILLIAM H. SWEET, M.D., Demonstrator of Ophthalmology, Jefferson Medical College. With chapters by CHRISTIAN R. HOLMES, M.D., CASEY A. WOOD, M.D., and WENDELL REBER. With 256 illustrations, including coloured plates. London: Rebman, Limited. 1903. Pp. 532. Price 17*s.* net.

THIS text-book contains a very good *résumé* of the present state of ophthalmological knowledge and is well adapted to the purpose for which it was designed. It is essentially practical and hence but scanty space is devoted to optics. There is, however, sufficient to enable brief explanations accompanied by diagrams to be given of the nature of prisms and of the forms and proportions of concave, convex, and cylindrical glasses, of mirrors, of the formation of the image in the ophthalmoscope, in the ophthalmometer, and in retinoscopy, as well as of the adaptation of lenses for the correction of errors of refraction. The style is clear and if the contents of the work are thoroughly mastered neither the student nor the practitioner need be apprehensive of the correctness of his diagnosis or of the propriety of the treatment which he intends to adopt. In the section on Phlyctenular Keratitis we notice that the authors recommend, and in this we are in full accordance with them, that the use of sweetmeats and pastry should be interdicted.

A good section is devoted to the subject of Foreign Bodies in the Eyeball, wherein it is shown that their presence and nature can be to some extent determined by a consideration of the circumstances in which the injury was inflicted. Another symptom to be noted is the presence of "siderosis," or the rusty-brown discolouration of the iris which is likely to follow persistent retention of any foreign body in the eye. The use of the ophthalmoscope and especially the employment of the Roentgen rays, by means of which a shadow can be obtained of a fragment of shot, glass, stone, or coal, and of the sideroscope (not "siderscope" as given both in the text and index) are also considered; and notice is called to the pain caused by the approximation of a strong magnet. Good woodcuts are given showing the old-fashioned Hirschberg magnet, the medium-sized magnet of Dr. Sweet, one of the authors of this treatise, and the giant magnet of Haab, and directions are given in regard to the mode in which magnets should be used. There is an interesting and valuable section on the Economic Value of Vision—a subject which has hitherto not received sufficient attention.

The chapters on the Diseases of the Lacrymal Apparatus, Orbit, and Cavities accessory to the Orbit, by Dr. Christian R. Holmes of Cincinnati; on Ocular Symptoms in General

Disease, by Dr. Casey A. Wood of Chicago; and on the Pupil in Health and Disease, by Dr. Wendell Reber of Philadelphia, are important and valuable additions to the work. Dr. Holmes recommends the gradual dilatation of the ducts in cases of lacrymal obstruction, increasing the size until the largest probes are passed, which, although good authorities may be cited for the practice, we are inclined to regard as rarely advisable, as a matter of fact, epiphora often occurs even when the larger probes can be easily passed.

In speaking of the operations for cataract the authors are cautious in their statements but appear to prefer the operation of extraction with iridectomy. They remark, however, that "the simple is the ideal method in selected cases, its great advantage consisting in the preservation of a round pupil. The greater difficulty in expressing the lens and in freeing the anterior chamber of particles of retained cortical material is not regarded as an argument against the operation. The most serious objection to simple extraction is the frequency of prolapse of the iris. Moreover, operations for after-cataract are more frequently required. The disadvantages of the combined operation are the mutilation of the iris, hæmorrhage into the anterior chamber, and subsequent disturbance of vision by the coloboma." They consider the combined operation to be undertaken preferably in nervous patients; in all complicated cataracts; in cases where the iris reacts sluggishly or where the anterior chamber is shallow; in immature cataract, and in eyes the subject of chronic inflammation. Amongst the dangers of the operation not mentioned by the authors is the failure to recognise that the point of the knife has not penetrated the whole thickness of the cornea but is travelling between the layers. We have seen this occur on several occasions in inexperienced hands with fatal results to vision. The authors might with advantage have sounded a note of warning to young practitioners against undertaking at too early a period an operation for the division or removal of a secondary cataract. Cortical substance undergoes absorption in the course of a year or two with steady improvement in vision and if the needle is too freely used the vitreous, bulging forward, is apt to block the irido-corneal angle and to induce an attack of glaucoma, for which instant attention and probably operation are required. Needling for secondary cataract should not be undertaken without due consideration.

A feature of the book is the excellence of the illustrations which we have not seen surpassed and which are set off to the best advantage by the quality of the paper on which they are printed. One or two of them are coloured but there are several in which the introduction of colour would be a distinct improvement. For example, in the illustration of interstitial keratitis the shading required to represent the fine pericorneal branches of the anterior ciliary arteries, though quite correctly placed, gives the impression of a marked chemosis, the cornea appearing at the bottom of a pit, a condition which in that affection does not occur. Were the ciliary circumcorneal zone coloured this aspect of a depressed cornea would be removed. The drawing representing the arteries and veins surrounding the eye would also be much improved by tinting these vessels red and blue respectively and coloured drawings of some of the diseases of the fundus would add to the beauty of the work and at the same time render it more instructive to the student. The illustrations of the operations for the extraction of cataract, for pterygium, for tenotomy, for iridectomy, for entropion and ectropion, for tarsorrhaphy, and those showing various diseases as glioma, carcinoma, sarcoma, and lacrymal affections, are all very creditably executed and will prove serviceable to the practitioner who is called upon to operate. We have much pleasure in recommending the volume to our readers.

LIBRARY TABLE.

A Manual of the Practice of Medicine. By A. A. STEVENS, A.M., M.D., Professor of Pathology in the Woman's Medical College of Pennsylvania; Lecturer on Physical Diagnosis in the University of Pennsylvania; Physician to the Episcopal Hospital and to St. Agnes' Hospital. Sixth edition, revised and enlarged. Illustrated. London, Philadelphia, and New York: W. B. Saunders and Co. 1903. Pp. 556. Price 10*s*. 6*d*.—This manual is intended especially for students and as it has reached a sixth edition it has evidently been duly appreciated. For purposes of examination, however, we cannot recommend it to English students, but to supplement study in the wards and out-patient rooms—in other words, as a guide to purely clinical work—it will be found useful. The remarks on physical examination will considerably aid the student in the early days of his study of practical medicine. By reference to a book of this nature many hints may be obtained which will prove of value in intimating the phenomena which may occur in various diseases and how they should be interpreted. A student may be able to hear certain sounds with the stethoscope but he requires instruction as to the correct deductions to be made from them. Throughout the book the remarks dealing with symptoms and physical examination are quite satisfactory but those concerning pathology are too condensed to be of real value. The subject of differential diagnosis also is considered very briefly. This is especially so in the section on diseases of the nervous system. The directions as to treatment are necessarily condensed but the author has succeeded in giving a large amount of useful information in a small space. In this edition the entire section on diseases of the digestive system has been rewritten and will now be found full and accurate.

Olive Latham By E. L VOYNICH. London: William Heinemann. 1904. Pp. 286. Price 6*s*.—This is a very painful and exceedingly clever book. Olive Latham is the daughter of a curiously mixed parentage, for her father was a scholar and an enthusiast with a passion for the education of the masses, while the mother was a woman of the eminently respectable middle-class English type who presented her daughter with the "Poems of Frances Ridley Havergal" when she went away to become a probationer in a hospital. When later she came home as a nurse she was somewhat of a trial to her father, being a little like the lady of whom it was said that she was "icily regular, faultily faultless." When her father had "given her in the shy, half reluctant way of a man naturally reserved and long used to silence some small hint of his secret grief" she did not wound him by any tactlessness; she listened to him with grave attention, but next morning when he came down to breakfast he found some small pepsin tablets laid beside his plate. But Olive Latham had at the same time infinite potentialities for romance. She had become engaged to Vladimir Damarov, a Russian revolutionist, and on the receipt of an urgent telegram from Karol Slavinski, a Polish friend of his, she starts at once for Russia to nurse him. The Russian section of the book, which is saturated with the horror of despair, is the most effective part of a remarkable work. There is no fine writing about it and the pity of it is that it reads like absolute truth. Small wonder that Olive's nerves broke down after Vladimir's death or that on coming home she should have suffered from that horror of black darkness which many know so well but which we have never seen so well described. Mrs. Voynich's psychology is sound and learned without being priggish, therefore it is convincing, while she deserves great praise for the care which she has taken to get her medical details correct, especially as she afflicts Karol Slavinski with disseminated sclerosis. The book is not a cheerful one but it is well worth reading.

THE

BRITISH MEDICAL ASSOCIATION.

MEETING AT OXFORD.

THE SECTIONS.

MEDICINE.

FRIDAY, JULY 29TH.

Dr. J. MACKENZIE (Burnley) opened the meeting by reading a paper on

The Maternal Heart in Pregnancy.

The results of an inquiry into the changes in the circulation of healthy pregnant women were given. These pointed to inefficiency in the work of the heart, particularly to engorgement of the right side. This was extremely marked in mitral stenosis, and an analysis of certain symptoms was given to illustrate the danger of pregnancy in these cases. The murmurs of mitral stenosis were dealt with and it was shown that the lesion was progressive; when the presystolic murmur disappeared and only a diastolic murmur was left the auricle was paralysed and the cardiac rhythm became irregular. Tracings of the apex beat and jugular veins were shown to prove these statements. Dr. Mackenzie considered that pregnancy should be forbidden when there were marked signs of failure of compensation, and even when with fair compensation the pulse was irregular, or when only a diastolic murmur was present at the apex. If pregnancy had already begun it was justifiable to interfere in such conditions. Pregnancy might be permitted with a presystolic murmur and a normal apex beat within the nipple line. The onset of œdema of the lungs was the most important sign to watch for during pregnancy. The paper was illustrated by many tracings of the radial pulse, the apex beat, auricular contraction, and jugular wave in the conditions described.

Dr. H. O. NICHOLSON (Edinburgh) read a paper on

The Management of Cases of Pregnancy complicated by Heart Disease,

in which he considered the following points: (1) the blood pressure during normal pregnancy; (2) the conditions leading to hypertrophy of the heart during pregnancy; and (3) the state of tone of the arteries and arterioles, as observed (*a*) in primiparæ and (*b*) in multiparæ, during normal pregnancy and when the pregnancy was complicated by disease of the heart. During pregnancy a toxin of unknown nature led to increased peripheral resistance which might become great enough to cause anuria and eclampsia. With regard to the treatment of dropsy occurring towards the end of pregnancy small doses of mercury two or three times a week gave better results than any vegetable aperient. Vasodilators were of great value where the embarrassed heart threatened failure; and two cases were quoted where 15 grains of thyroid extract given daily relieved the cardiac engorgement and aided diuresis. If alarming symptoms occurred from distension of the right heart towards the end of labour amyl nitrite was of value.

Dr. G. A. GIBSON (Edinburgh) read a paper on

Bradycardia,

illustrated by lantern slides. The so-called false bradycardia, or slow pulse unaccompanied by slowness of the heart, called for no consideration. True bradycardia or slowness of the heart beat fell under several categories: (1) cases in which the whole heart was involved, owing to the influence of the vagus; (2) cases in which the conductivity of the cardiac impulse was impaired, only a few of the auricular contractions being conducted to the ventricle; and (3) cases in which the ventricle took on an independent rhythm, pulsating without any preceding contractions of the auricle. Tracings were exhibited to the meeting, taken from a case in which the radial pulse had varied from 26 to 32 per minute. By taking tracings at the same time from the jugular vein and from the radial artery it was seen that to one beat of the radial there were three or four beats of the auricle. Tracings of the same case taken synchronously from the apex beat and the jugular vein showed that only one of three or four auricular contractions was conducted to the ventricle. Tracings from other cases showed imperfect ventricular pulsations which were too weak to cause a peripheral pulse wave. In cases of recurrent bradycardia epileptiform attacks were frequent sequelæ and were first described by Adams of Dublin. As regarded the cause of bradycardia Dr. Gibson had already expressed the opinion that with imperfect circulation in the brain any undue exertion of the brain tissues might lead to recurrent bradycardia. In response to a request from Dr. T. D. ACLAND (London) that he should give his experience in the treatment of bradycardia, Dr. Gibson said that he had never found atropin to be of any use, but digitalis, strophanthus, and other members of the digitalis group had in his hands yielded more or less success. He believed that they acted by improving the nutrition of the cardiac muscle. It was all-important that the vessels of the abdomen and its viscera should not be dilated and he believed that for the attainment of this object a modified course of Ling's Swedish gymnastics was of greater use than the Nauheim method of treatment.

Dr. W. J. TYSON (Folkestone) stated that in his experience bradycardia was more common in old age and in women and that atropin was of value in its treatment.

Serum Treatment of Disease.

Dr. E. W. GOODALL (London) opened a discussion on the Present State of Serum Therapeutics, with a brief review of the origin of serum therapeutics ten years previously and their subsequent rapid development. He stated his intention of referring only to antitoxic sera proper—i.e., the blood serum of animals immunised against certain diseases, usually bacterial. There were two kinds of sera now in use: (1) antitoxic, neutralising the toxic products of a micro-organism; and (2) antimicrobic, destroying the organism itself or inhibiting its action. There were two [illegible] of diseases: (1) the intoxications [illegible] as an example), and (2) the infections (of which plague was an example). Antitoxic serum was prepared by immunising animals with toxins, antimicrobic serum by immunising with micro-organisms. In some diseases both kinds of serum could be employed. 1. Diseases treated by antitoxic sera were diphtheria, tetanus, snake-bite, hay fever, dysentery, plague, typhoid fever, and tuberculosis. 2. Diseases treated by antimicrobic sera were streptococcal and staphylococcal infection, plague, typhoid fever, dysentery, pneumonia, anthrax, tuberculosis, Malta fever, and relapsing fever. 3. Diseases treated by sera of uncertain nature were small-pox, pertussis, yellow fever, syphilis, general paralysis of the insane, epilepsy, and cancer. Many of these so far had yielded no certain results and workers publishing uncertain and immature results deserved severe censure. The results of the antisera introduced by Maragliano and Marmorek for tuberculosis were unsatisfactory. A serum had been prepared which protected animals against pneumonia, but this was not as yet efficacious as a curative agent for man. Sclavo of Sienna had had fair results with anthrax. The antitoxin treatment of diphtheria had been eminently successful. It was introduced in 1894 and elaborate reports had been drawn up by the medical superintendents of the fever hospitals dealing with 10,700 cases of diphtheria, 5000 of which had been treated with antitoxin. Dr. Goodall quoted figures showing the rapid decline of the case-mortality from 22·8 in 1895 to 11 in 1902 as the percentage of cases treated with antitoxin rose from 61·8 in 1895 to 87·9 in 1902. The recovery-rate after tracheotomy had more than doubled since the introduction of antitoxin; the records of the Asylums Board showed that during the years 1889 to 1894 [illegible] cent. recovered after tracheotomy and [illegible] inclusive 62·9 per cent. recovered. [illegible] paralysis had increased since the introduction of antitoxin. Severe cases, or cases seen late in the course of the disease, which without antitoxin must have had a fatal termination were enabled with antitoxin to survive. Dr. F. J. Woollacott had given details in the Asylums Board reports for 1898 and in THE LANCET in 1899.[1] The result of the treatment of tetanus by antitoxin was not so striking as was that of the treatment of diphtheria; but this could not be expected when it was remembered that the treatment was not in most cases administered until spasms had set in, and spasms in tetanus corresponded in point of time to paralysis in diphtheria—i.e., they were due to the remote effects of the toxin. The experimental basis of treatment of snake-bites was sound maize. Injected subcutaneously into a susceptible person the toxin produced local and general symptoms of hay fever. Horses were inoculated with the toxin and their serum contained an antitoxin which promised to act remedially when applied as a remedy for hay fever. The serum of Yersin, of Lustig, and of others had not been very successful with plague and the Indian Plague Commission had not reported favourably upon it. In dysentery the results of serum treatment were not so far very promising. It was difficult to form a correct conclusion as to the result of the serum treatment in typhoid fever because the mortality of that disease varied greatly within limited periods of time and in statistics the age of the patients, an important factor in comparing mortality rates, was frequently omitted. The Chantemesse serum treatment was employed in 186 cases in a Parisian hospital from April 1st, 1901, to Dec. 1st, 1902, with a mortality of 3·7 per cent. During the same period in other hospitals in Paris 1478 cases treated with ordinary methods had a mortality of 19·3 per cent. Dr. Goodall believed that most obstetricians would endorse the conclusion of the committee of the American Gynæcological Society that they could find no proof that antistreptococcic serum would improve the results in the treatment of streptococcic puerperal infection. There were different strains of streptococci and a polyvalent serum had been produced the organi ictic uses of The passive immunity conferred by antisera seldom lasted longer than a few weeks. Dr. Goodall then discussed the question of standardisation, the factor on which correct dosage so greatly depended. Ehrlich's "unit" had been accepted as the standard for diphtheria in most countries; in France Roux's standard was still employed. The dose of diphtheria antitoxin was measured by "units", the doses of tetanus and snake bite antitoxic sera were measured in terms of so many cubic centimetres. The standardisation of the antimicrobic sera was in a chaotic state. Dr. Goodall's experience with diphtheria had led him to conclude that it was unnecessary to give more than 16 000 units of antitoxin within 24 hours of the commencement of treatment and in proof of this conclusion he submitted a table of 475 classified cases of diphtheria. There was no doubt that the earlier the case was treated the more favourable was the prognosis. From 2000 to 15 000 units were given within 24 hours of the commencement of treatment, either in one dose or in two or three at intervals of a few hours; the age of the patient should not be taken into consideration. Dr. Goodall then discussed the dosage in tetanus, snake poison, plague, typhoid fever, streptococcic infection, and hay fever. The usual *method of administering these sera was by subcutaneous* injection and this Dr. Goodall thought would continue to be the method most in vogue. Reference was made to the eruptions sometimes following hypodermic injections, sometimes immediately, sometimes after an interval of several days. He was not aware that there were any contra-indications to the administration of antitoxin. In conclusion it would be noticed, he said, that the most striking success, clinical as well as experimental, had been reached in the toxæmic diseases rather than in the infections.

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[1] THE LANCET, August 26th, 1899, p. 561.

Professor S. H. C. MARTIN (London) referred to two experiments with snake venom made by Professor T. R. Fraser: (*a*) toxin and antitoxin were mixed in a glass and injected into an animal and it was determined how much antitoxin was required to neutralise the toxin; (*b*) toxin was injected into one flank of an animal, antitoxin into the other, and it was found that much more antitoxin was required to neutralise the toxin than in (*a*); and (*c*) a third experiment of his own in which he injected toxin subcutaneously and antitoxin into a vein and found that only the same amount of antitoxin was required to neutralise the toxin as in (*a*). The practical conclusion to draw from the last experiment was that antitoxin should be injected intravenously, not subcutaneously, when a patient had urgent symptoms.

Dr. F. FOORD CAIGER (London) emphasised with statistics the necessity of early treatment of diphtheria by antitoxin. Post-scarlatinal diphtheria had practically disappeared since the introduction and use of antitoxin. Polyvalent sera were required for the treatment of severe throat and glandular complications of diphtheria. He had tried injections of diphtheria antitoxin combined with antistreptococcic *serum in such cases with poor results.* He referred to the rashes consequent on the administration of antitoxin; these were sometimes accompanied by muscular pain, pyrexia, and arthritis, and it was noticeable that such severe serum reactions appeared *only after* an incubation period of about nine days. Local trouble at the site of inoculation of antitoxin was of considerable severity in some adults but children rarely suffered at all. Owing to these after effects he advised early administration of antitoxin, even on suspicion, to young children, but recommended waiting in the case of adults and older children. The dose should be regulated according to the severity of the case; the age and size of the patient were unimportant. Intra*venous injection of antitoxin should be employed in cases* with urgent symptoms.

Dr. W. BULLOCH (London) said that the serum treatment of disease was practicable and a comparatively simple matter in the case of toxæmic diseases, such as diphtheria and tetanus, where only the toxins entered the blood and all that was required was an antitoxin to neutralise the toxin. The case was entirely different and infinitely more complex when the germs themselves entered the blood (as in streptococcal infection, tubercle, typhoid fever, and most microbic diseases) and something was required which would dissolve the bacteria—a bacteriolytic serum. In such conditions Ehrlich had shown that intermediary factors were required, the *immune body and the complement.* The immune body was obtained from the serum of the animal and had to combine with the complement manufactured by the cells of man. This process was very complex, as anti-immune bodies might be injected into man at the same time and it was impossible to say beforehand whether in giving such serum as a remedy one was not actually lessening the patient's power of resistance and aggravating his disease. Antimicrobic sera, he concluded, should not be employed; at present the only hopeful outlook for such diseases lay in treatment by "vaccines."

Dr. GOODALL replied.

SURGERY

FRIDAY, JULY 29TH

Professor J. DEAVER (Philadelphia) read a paper on

Hepatic Drainage.

At the present time the opin certain phenomena produced biliary tract certain inflammatory changes, in every instance *for the formation* of gall stones. Multiple pregnancies, indiscretions in diet, sedentary habits, a dependent fundus and torpidity of the bile secretion might predispose to, or favour, disease of the gall bladder wall, but had no influence whatever in the formation of the calculi. The liver, the gall bladder, and the ducts became infected by the ascent of bacteria from the duodenum by way of the common duct or by an infection of the liver from the blood in the portal vein. Experimental investigations, post-mortem proofs, and clinical *experience were teaching* that the ascending infection, heretofore believed to be the nearly sole source, could not be responsible for many infections of the bile tract. Quoting from Adami they might assume (1) "that the colon bacilli in small numbers are in the healthy individual constantly finding their way into the finer branches of the portal circulation; and (2) that one of the functions of the liver is to arrest the further passage of these bacilli into the general circulation and to destroy them *through the agency* of the specific cells of the organ. Then if the action of the liver cells has been disabled by the toxic products of the bacteria these may reach the bile and spread through the gall bladder and ducts." Cirrhosis of the liver might be the direct result of infection ascending the common duct from the duodenum or through the portal circulation from the intestine. Literature contained many references to instances of this type of cirrhosis. Several observers had shown that when infected bile was obstructed by ligature the number of bacilli behind the point of obstruction became enormously increased. Many writers believed that the retained bile *per se* did not occasion biliary cirrhosis but that there must also occur inflammation of the bile ducts, cholangitis. In urging the possibility of

THE
BRITISH MEDICAL ASSOCIATION.

MEETING AT OXFORD.

THE SECTIONS.

MEDICINE.

FRIDAY, JULY 29TH.

Dr. J. MACKENZIE (Burnley) opened the mee[illegible]
ing a paper on

The Maternal Heart in Pregnanc[illegible]

The results of an inquiry into the changes [illegible]
tion of healthy pregnant women were given [illegible]
to inefficiency in the work of the heart [illegible]
engorgement of the right side. This was [illegible]
in mitral stenosis, and an analysis of certai[illegible]
given to illustrate the danger of pregnanc[illegible]
The murmurs of mitral stenosis were d[illegible]
shown that the lesion was progressive; wh[illegible]
murmur disappeared and only a diastolic [illegible]
the auricle was paralysed and the cardi[illegible]
irregular. Tracings of the apex beat an[illegible]
shown to prove these statements. Dr. M[illegible]
that pregnancy should be forbidden whe[illegible]
signs of failure of compensation, and [illegible]
compensation the pulse was irregul[illegible]
diastolic murmur was present at the [illegible]
had already begun it was justifiabl[illegible]
conditions. Pregnancy might be [illegible]
systolic murmur and a normal apex [illegible]
line. The onset of œdema of th[illegible]
important sign to watch for durin[illegible]
was illustrated by many tracings [illegible]
apex beat, auricular contraction [illegible]
conditions described.

Dr. H. O. NICHOLSON (Edinbur[illegible]
[illegible] of

The Management of Cases of Re[illegible] [illegible]se.
Dis[illegible] [illegible] gall-
in which he considered the f[illegible] the
pressure during normal preg[illegible] great
ing to hypertrophy of the he[illegible] It was
the state of tone of the ar[illegible] [illegible]der; (b)
(a) in primiparæ and (b) in [illegible] performed,
nancy and when the preg[illegible] and (c) in
of the heart. During pr[illegible] was indi-
led to increased peri[illegible] of empyema
great enough to caus[illegible] was irrational,
to the treatment o[illegible] covery.
pregnancy small do[illegible] eaver's
gave better resu[illegible] been
dilators were of[illegible] oved,
threatened fail[illegible] of
grains of thy[illegible] to the
engorgement [illegible] then
occurred fro[illegible] ing
of labour an[illegible] tube

Dr. G. A.[illegible]

[illegible]ty of the car[illegible]
the auricular c[illegible]
ventricle; and (3) [illegible]
independent rhythm, [illegible]
tractions of the auri[illegible]
meeting, taken from [illegible]
had varied from 26 t[illegible]
at the same time [illegible]
the radial artery [illegible]
the radial there wer[illegible]
Tracings of the sam[illegible]
apex beat and the jug[illegible]
or four auricular cont[illegible]
Tracings from other [illegible]

pulsations which were too w[illegible]
wave. In cases of r[illegible]
attacks were frequ[illegible]
Adams of [illegible]

[illegible] would [illegible] be pushed
[illegible] as [illegible] to open the
[illegible] axilla. When the stone
[illegible]zed over the stone and
[illegible] the duct might be closed
[illegible]uld always be employed in
[illegible]struction of the common duct
[illegible] be considered as present and
[illegible] and hepatic ducts was indi-
[illegible]cystostomy should be performed.
[illegible] was indicated (a) in benign in-
[illegible] in malignant disease if the patient
[illegible] (c) occasionally in chronic pan-
[illegible] conjunction with a plastic operation
[illegible] for the relief of a persisting fistula.
[illegible] was much less often performed than
[illegible] of surgical treatment in infection of
[illegible] was eminently satisfactory if operation
[illegible] an early period and before the advent
[illegible] Less than 5 per cent. of operated cases
[illegible] operation and the mortality from operation
[illegible]cated cases had been reduced to less than
[illegible] The Robson technique, with its free, well-placed
[illegible] sand pillow arching the back, and the disloca-
[illegible]ver downward and outward, enabled the operator
[illegible] ducts into easy access even in the obese.
[illegible] drainage was sometimes responsible for failure and
[illegible] caused primarily by obstruction of the cystic duct
[illegible] too early removal of the rubber tube. Adhesions
[illegible] operation might inhibit the movements of the
[illegible]ing viscera and give rise to annoying disturbance of
[illegible]stro-intestinal tract, particularly of the stomach and
[illegible]num. The use of gauze for drainage should be limited
[illegible] as was compatible with safety and the gauze should
[illegible] guarded on the intestinal side with rubber tissue. By
these means the adhesions resulting were thin and filmy.

Professor RODMAN (Philadelphia) read a paper on

Carcinoma of the Mammary Gland; Early Diagnosis and Radical Operation necessary for its Cure.

He dwelt mainly on the numerous lymphatic connexions of the breast and pointed out that immunity from recurrence depended chiefly on a thorough removal of all the lymph nodes liable to be infected.

Mr. W. SAMPSON HANDLEY (London) read a paper on

Certain Defects in the Present Operation for Mammary Cancer,

based on investigations carried out in the Middlesex Hospital Cancer Research Laboratories. He pointed out that the invasion of the lymphatic plexus of the deep fascia by breast cancer was not an embolic process but that the cancer actually grew along the deep fascial plexus like a water weed along a network of irrigation channels, filling
[illegible] up. This process, to which subcutaneous and osseous
[illegible]ses were, in his opinion, secondary, might ultimately
[illegible] a centrifugal manner to the greater part of the
[illegible] the body, sparing only the distal portions of the
[illegible]o emphasise his plea for a freer removal of the
[illegible] in a downward direction, he stated that the
[illegible] viscera were not infrequently infected from the
[illegible] plexus by direct infiltration of the abdominal
[illegible]tric angle. From the operative point
[illegible]uld evidently be to remove as widely as
[illegible]rea of the deep fascia centred on the
[illegible] the deep fascia should be removed as
[illegible] three inches below the tip of the
[illegible] axilla should be opened by turning
[illegible]ith its base along the lower edge of
[illegible]he growth itself should be circum-
[illegible] by an annular incision with a linear
[illegible] the linea alba so as to allow of
[illegible] of the epigastric region.

[illegible]ALKER (London) gave a lantern
[illegible]tomy of Freyer's Operation for
[illegible] P. J. FREYER (London) read a

[illegible] Cases of Removal of Prostates.

[illegible] since the previous meeting of the
[illegible] and the prostates removed were
[illegible] ranged from 53 to 84 years and
[illegible] three-quarters of an ounce to 14[illegible]

[illegible] July 23rd, p. 197.

ounces with an average of three and a quarter ounces 13 of the cases were operated on in hospital and 44 in private practice One patient, aged 84 years, was an officer in the army, the prostatic symptoms had lasted for eight years and for five years he had been wholly dependent on the catheter The urine was fœtid and the patient was emaciated All the symptoms were completely relieved by the operation and the patient was now in excellent health. Another patient, aged 73 years, had had prostatic symptoms for 15 years and had been entirely dependent on the catheter for ten years and vesical calculi had been removed on two occasions. The prostate was removed entire in its capsule and it weighed 14¼ ounces The patient was now in good health and could micturate naturally. In another case retention of urine was not complete, although the prostate weighed 10½ ounces This was probably due to the fact that the prostate was greatly displaced from its normal position towards the bladder, so that there was not much lateral pressure on the urethra In contrast to this case several prostates were shown weighing from three quarters of an ounce to one and a half ounces in which there was complete dependence on the catheter Up to the present Mr Freyer had performed 110 operations of complete enucleation of the prostate It was found that in three of these the disease was carcinomatous Among the remaining 107 operations, there were ten deaths, five of which were from disease incident to old age and apart from the operation, but accepting these deaths as occurring in connexion with the operation they had a mortality of only 9 per cent, in comparison with a death-rate of 12½ from lithotomy in all ages, including children and of 34½ per cent from lithotomy between the ages of 55 and 80 years

In the discussion which followed Mr JORDAN LLOYD (Birmingham) showed a series of sections of prostates by which he maintained that it was proved that enlargement of the prostate was always due to the presence of adenomata

Dr H T HERRING (London) read a paper on the Cause and Effect of Enlarged Prostate, and Mr DANIELL (London) maintained that all cases of so called adenoma of the prostate were produced by overgrowth of the walls of the prostatic ducts and his paper was illustrated by a large number of micro photographs

STATE MEDICINE.

FRIDAY, JULY 29TH.

Mrs HELEN BOSANQUET who opened the discussion on

Poverty and Public Health,

said there was one section of the public which was below the standard of the better informed and it was this class that it became their duty to try to raise to a higher ideal Much of the sympathetic interest taken in the poor had from its injudicious methods done more harm than good but credit must be given to the workers for their good intentions The poor did not seem to realise how much those working among them cared for them, they had no desire to better themselves and it thus became a duty to try to arouse them to a higher standard of thought as regards dirt, overcrowding, foul air, and insufficient clothing A dirty home was, however, no claim for charity What was wanted was the improvement of general methods, not of details which would follow of their own accord A definite policy of reform was required among the many workers She did not believe that the state of their homes and absence of all hygiene were due to poverty in most cases but rather to the want of character and the remedy for this was education As regarded overcrowding and insanitation if the houses were improved and made wholesome the inhabitants in a short time made them foul and overcrowded them, while in new buildings, as a rule, only the better class of working people were admitted, the lower stratum going elsewhere and merely distributing the overcrowding The results had been failure An attempt had been made recently to supplement the children's food by meals at school but this only resulted in the mothers not giving them meals at home, while supplying them with sterilised or prepared milk was taken to mean that the mothers need not nurse their babies. In fact, milk was looked on as a medicine, not as a food The methods were not wrong but the application of them was, if the people could be made to take an intelligent interest in their homes and families all difficulties would disappear Mr. Rowntree had shown that the great majority could have healthy homes if they knew how to conduct them As a matter of fact, the very poor often did more than those better off Education was, in Mrs Bosanquet's opinion, the only remedy. Workers in all classes worked from their sense of responsibility, the natural state of man being slackness, hence every effort should be made to make the poor feel their responsibility The men must be made to take an interest in their families, for, as a rule, they knew little of them and only looked on them as a nuisance The intelligent feeding of children must be taught, especially those under school age All women and girls should be taught the care of children and this might be done by district visitors or at mothers' meetings. Some persons were so degraded that nothing would do any good to them and their children should be sent to day industrial schools

In the absence of Mr T P WHITTAKER, M P., his paper was read for him and he traced all the evils of the poor to abuse of alcohol and the waste of money on unnecessary things The majority of workers had plenty of money to live decently if they could only be persuaded to Drink in his opinion caused poverty Poverty did not lead people to drink The drunkenness of the father led to lowered vitality of the family The livers in the slums were there because they drink and they would not live in model dwellings because they might not overcrowd. The houses were what the inmates made them

Alderman HUGH HALL (Oxford) said that the housing question was a most unsatisfactory one and was not yet solved Town life was a permanent fact for many and was largely increasing In small towns there was some congestion but not nearly as much as in the big ones The urgent need of improvement was recognised but very little was being done In Oxford the chief trouble was bad houses there being very little overcrowding The mistake was to destroy houses and not to build new ones In fact, the bicycle was a better friend to the working man than the municipality, for it allowed him to live at a distance from his work in a decent home, while the municipality only turned him out if the area was overcrowded In his opinion the remedy for the evils was the rating of vacant sites, cheaper dwellings built on money borrowed at a low rate of interest, allowing a long time for repayment, and easier building laws Municipalities were not progressive or in favour of new methods The central authority—the Local Government Board—to which the medical officers of health should report on the deficiencies of the towns, should insist on the corporations putting their towns in order But he believed this would be better done by a new department In addition public feeling must be aroused

Dr G A HERON (London) believed that the education of public opinion was the remedy, but it was important to educate the parents, more particularly the mothers, in the care of their children Medical men were the best qualified to do this, though Lord Londonderry had said there were no teachers available and there would be none till 1906

Mr J STEWART (Clifton) thought that it would be best to educate the teachers to teach the children personal and domestic hygiene He believed drink was an important factor in the production of poverty Patient hard work on the question was required and in time a good result would follow

Miss T. JOHNSTONE believed many women could be found as willing workers and narrated her experience among the factory hands of Bristol

Dr J T WILSON (Lanark) referred to the difficulties in the way of obtaining sanitary reforms

Dr G F MCCLEARY (London) did not believe mothers neglected to give their children food because it was supplied at school The high price of milk was against its wide use, for the poor could not afford it He did not think everything could be done by education, as some speakers seemed to think, and he did not agree with Mr Whittaker that drink caused poverty

Mr W. MCADAM ECCLES (London) believed that poverty was due to indifference Education was the remedy to make men respect themselves more and stimulus after. He thought that water should be supplied free

Dr GROVES warned those who advocated education not to worry the Education Board It was anxious to do its best but did not like every one worrying it with his views.

Dr. ALICE DRYSDALE believed that as long as poverty was prevalent it was difficult to raise the standard of public health

Mrs. BOSANQUET, in reply, said that the taste for alcohol was an acquired one and she believed men drank from sheer vacuity of mind. In her opinion much harm was done in talking about the inherited tendency to drink. She believed it was best to drive the poor out of the towns; suitable dwellings should be erected in the outskirts. She was a strong believer in educating the people to the sense of their *degradation.*

Dr. A. E. BOYCOTT (London) read a paper on

Ankylostomiasis.

His observations were made among the Cornish miners, in whom examination was very difficult owing to the fact that they were not hospital patients. Anæmia was not a symptom to be relied on, as many suffered from the disease and did not show any anæmia. Examination of the fæces was impossible. In his search for a trustworthy means of discovering whether or not a man suffered from the disease he found that a blood examination was the best method, as there was a large increase in the eosinophile bodies. The method was not absolute but a good working one. (Several lantern slides were shown.)

Dr. KENNETH W. GOADBY (London) read a paper entitled

"*A Plea for Oral Hygiene, with a Suggestion.*"

Oral sepsis had recently been shown to be associated with many important diseased conditions and to be the portal of infection in some grave disorders. Dental caries was also important in the production of malnutrition, particularly in children, and might also be the origin of various sorts of stomatitis. In a certain number of well-authenticated cases death might supervene as a result of oral infection, while a considerable number of pathogenic organisms were known to inhabit the mouth from time to time. The pathology of dental caries and with it affections of the soft tissues of the mouth was found to be associated in a great measure with the alteration that had occurred during recent decades in the composition, both chemical and physical, of the national food-stuffs. There was apparently no definite change in the quantity of lime salt present in individual teeth. Children particularly gave evidence of affections of the nose and throat, associated with carious teeth and oral sepsis, whilst the number of children suffering from these two conditions was at least 80 per cent. With such a large number of the rising generation suffering from dental caries and oral sepsis, with their well-recognised effects upon physical development, the matter became one of national importance and required considering from the point of view of State medicine. The present methods of dealing with oral disease only touched the fringe of what was required to be done; although much was being done by the appointment of dental surgeons to schools, yet the number of dental surgeons in proportion to the number of children to be treated was hopelessly inadequate. The same facts held good for the treatment of cases in dental hospitals. The individuals who required treatment were divisible into three classes: (1) children in schools; (2) young adults, such as domestic servants and the like; and (3) the general mass of the working-class population. Amongst children those of from one year to five years of age were the ones who required special treatment, particularly prophylaxis. The other two classes required more particularly ordinary dental attention and instruction in hygiene. The following scheme was suggested with a view to dealing with this very difficult question: the appointment of a dental surgeon by groups of schools of two or more, together with the local sanitary authority, his work to consist of periodical inspection of the whole of the children once in three months or oftener; the treatment of dental caries and oral disease at some central place, to which the children could conveniently be sent; and the superintendence of the periodical cleansing of the mouths of all young children, which might be performed by an intelligent assistant under the supervision of the dental surgeon. It was also suggested that the medical officer of health for the district should be empowered to send to the dental surgeon for treatment cases of chronic stomatitis and like conditions, especially during epidemics of diphtheria. The local sanitary authority might provide the room and material necessary. For the treatment of the other two classes it was suggested that the existing machinery in the shape of dental hospitals should be enlarged in its scope of operation in the following manner: by the appointment of clinical assistants, qualified men, at a salary, including board, as paid to house surgeons of various hospitals; by a nominal payment being made by patients sufficient to cover working expenses; by the work undertaken being the treatment of dental caries and oral sepsis and not artificial teeth; by the clinical assistants being under the jurisdiction of the hospital staff; and by the existing arrangements of the various hospitals in determining the propriety of treating any doubtful case. The scheme would not be in opposition to the practice of the qualified man and it aimed at treating that class of the population which was largely attended to by unskilled and unqualified persons, with an increase rather than a decrease of oral sepsis.

Mr. C. W. J. BRASHER (Bristol) read a paper on

The Segregation of Tuberculous Patients among Factory Workers

and described the methods employed at the factories of Messrs. J. S. Fry and Sons in Bristol. Here there were 2000 girls and women under 54 superintendents all carefully selected from the numerous applicants. All tuberculous patients were suspended from work, put on the sick fund, and sent to a sanatorium as soon as possible. None of them were allowed to return but were assisted to find work elsewhere or were pensioned. A brief table was given which showed very satisfactory results.

During the meeting the following motion was carried:—

It is highly satisfactory to the State Medicine Section to learn that the council of the British Medical Association have exerted themselves to secure the education of public elementary school teachers in personal (including oral hygiene) and domestic hygiene in order that every child in public elementary and secondary schools may be instructed in these subjects; and they beg to request the council to continue their efforts in this direction.

PATHOLOGY.

THURSDAY, JULY 28TH.

A discussion on the

Rôle of the Lymphocyte

was opened by Dr. G. LOVELL GULLAND (Edinburgh) by a paper entitled "The Lymphocyte; its Nature, Origin, and Development." In entering a plea for unanimity of nomenclature Dr. Gulland referred to the four varieties of non-granular cells—viz., the large and small lymphocytes, large mononuclear, and transitional. Of these the first two are agreed to be identical, but difference of opinion exists with regard to the two latter. The large mononuclears, according to Ehrlich, were distinct from the lymphocytes and became converted in the blood into transitionals, which latter formed the connecting link between the mononuclears and the polymorphonuclear neutrophiles. Dr. Gulland, on the contrary, regarded the leucocytes, mononuclears, and transitionals as merely stages in the development of one type and in no way related to the polymorphonuclears, and he based his contention on the observed facts that in all these cells the cytoplasm was faintly basophile, gradations in depth of colour depending on the thickness and arrangement of the strands and nodes of the cytoplasmic reticulum; granules, he said, existed as nodal points of the cytoplasmic reticulum, though often obscured by the thick strands; differences in the shape and position of the nucleus depended, according to the researches of Heidenhain, on the pull exerted by radii which were embedded in the cytoplasm and which diverged from the centrosome, astrosphere, or attraction sphere, in their endeavour to bring the astrosphere to the centre of the cell whilst the cell was at rest. The nucleus—the chief obstacle—was first pushed to one side, then deformed, becoming first kidney-shaped and afterwards horseshoe-shaped. The greater size of mononuclears and transitionals was explained as being due to absorption of fluid. Finally, the cells were classed into lymphocytes on the one hand, and neutrophiles, eosinophiles, and basophiles or mast-cells on the other. In adult life these two groups of cells were distinct and reacted differently to stimuli; the first were found normally in the blood, the second in the marrow. The point of origin of the lymphocyte was stated as the lymph glands and the lymphatic tissue of the tonsils, intestine, spleen, &c., although numerous lymphocytes could be demonstrated in the healthy marrow; indeed, in the marrow of young animals the lymphocytes still often outnumbered the rest of the cells. The view still held by some that lymphocytes could be derived from endothelial cells was adversely commented upon. In conclusion, Dr. Gulland held that the function of the lymphocyte was no doubt largely protective, especially when present in lymph glands and in this connexion an interesting point was raised in that the chief habitat of lymphocytes apart from lymph glands and marrow was the lymphatic tissue around the hollow tubes of the body—alimentary and respiratory tracts—spots occupied by saprophytic, non-virulent, or attenuated organisms.

Professor ROBERT MUIR (Glasgow) then read a paper entitled

Some General Considerations regarding the Relations of the Lymphocytes, as indicated by Pathological Conditions,

pointing out how easy it was to make in all good faith a series of transition forms from the small lymphocytes to all the members of the leucocyte class and the fallacy of concluding that any one variety might be transformed into any other according to circumstances In his opinion the chief considerations in connexion with the subject were the phylogenetic and ontogenetic development of the different classes of leucocytes, the character of the cells undergoing active development, and their sites of multiplication and the general behaviour of the different varieties under pathological conditions He agreed with Dr Gulland that the hyaline wandering cell with oval nucleus might be taken as the primitive type; next to this he would place the coarsely granular eosinophile—a well developed and common type of cell even amongst the lower animals—which appeared in the mammalian embryo at an earlier date than the finely granular cell, while the cells with well-marked neutrophile granules did not appear until the fifth month. In the bone marrow non granular cells with basophile protoplasm accumulated first and afterwards acquired neutrophile granules Non-granular cells multiplied in the germ centres of lymphoid tissue and finely and coarsely granular cells in
eosinophiles multiplied in either
ls in large numbers were chiefly
chronic conditions, eosinophiles
were attracted by special chemotactic substances in relatively non-acute conditions, while the finely granular cells were chiefly concerned in acute bacterial infections. In inflammatory conditions non-granular cells acting as phagocytes were also derived from the larger lymphocytes of the blood and from certain cells, normally fixed or sessile, and it became impossible to assign the source of origin to any given example, though Professor Muir had studied their course of development in lymphatic glands Further, the opinion was expressed that there were homologous, fixed or clasping cells which in inflammatory conditions became spherical in form and acted as phagocytes by a process of reversion to a mor
converse did not hold good On
to a normal condition the large
in size and assume the appearances of the small inactive lymphocytes The suggestion was advanced that in the mixed celled leukæmias cells were present which represented the non granular precursors of myelocytes that were seen in embryonic life and the possibility was raised that in some cases of lymphatic leukæmia the large lymphocytes might have been derived from the clasping cells of connective tissue

Dr J. M BEATTIE (Edinburgh) was then called upon for his paper on

The Lymphocyte in Inflammatory Exudations,

in which he pointed out that much of the difficulty experienced in studying the mononuclear cells of inflammatory exudations was due to the use of stained preparations alone and might be avoided by observing the cell in its living condition on the warm stage and by the experimental study of its developmental history Another difficulty consisted in the accumulation of various kinds of cells at the site of irritation in the early stages of inflammatory processes, many of which had migrated from distant parts, others being produced locally by proliferation of endothelial cells and fixed connective tissue cells Dr. Beattie had confined his work chiefly to the investigation of the peritoneal fluid and omentum in acute peritonitis following experimental injections of bacilli coli and the more chronic conditions produced by bacilli tuberculosis Referring to the lymphoid cells, he stated that these were present in the form of a sheath surrounding the vessels and were also collected in masses or nodules of varying size In early stages of the inflammatory process the differentiation between lymphoid and endothelial cells was well marked The *source of these masses of lymphoid cells was still in* dispute, but Dr Beattie's experiments supported the views of Ribbert, who contended that they were produced locally from pre existing lymphatic tissue, normally present though but little developed The importance of the cytology of serous effusions to the clinician was remarked, although Dr Beattie considered cerebro spinal fluid or pleural fluid rich in lymphoid cells did not necessarily indicate tuberculosis but merely a condition of chronicity In acute inflammatory exudations transition stages between the lymphocyte and large mononuclears were numerous, and he was distinctly of opinion that lymphoid cells did increase in size and the fact that so few transitional cells were present in the blood was explained by the assumption that they were formed in pre existing lymphoid tissue outside the vessel and only a few were washed in by the overflow from lymphatic channels or possibly by migration As to the function of these lymphoid cells, Dr Beattie had never observed phagocytosis by the smaller forms, but the larger forms were undoubtedly phagocytic, and he explained the difference by assuming the smaller forms to be younger and less functionally active Speaking of the clasmatocytes described by Ranvier he regarded them as derived from large mononuclear cells in a condition of active amœboid movement or from endothelial cells Mononucleated phagocytes played an important part in the early stages of infection and in the later stages were almost the only cells present With regard to the question of the formation of fibrous tissue by lymphocytes his observations were not sufficiently advanced to permit him to put forward definite opinions

Dr J H DRYSDALE (London) then read a paper on

The Clinical Significance of Lymphocytosis,

in which he confessed that he had under-estimated the difficulties of forming a just opinion of the clinical significance to be attached to the presence of a lymphocytosis Defining lymphocytosis as an increase beyond the limits observed in health of the absolute number *of lymphocytes in the circulating peripheral blood*, he pointed out the advantage of eliminating by this definition all conditions in which there was merely decrease in the number of polymorphonuclear leucocytes, the lymphocytes remaining constant, and advocated returning all differential counts in absolute numbers per cubic millimetre As a rough standard he counted 7500 leucocytes per cubic millimetre, made up of 5000 polymorphonuclears, 2000 lymphocytes, 350 large mononuclears, and 150 eosinophiles Briefly discussing what may be termed the physiological lymphocytosis of early and of adult life he passed on to lymphocytosis associated with pathological conditions, confining his remarks chiefly to those conditions in which the lymphoid tissue was affected and in which the number of lymphocytes in the circulating blood was increased Speaking of Hodgkin's disease which was variously regarded as the leukæmic stage of lymphatic leukæmia, lympho sarcoma, and tuberculosis, Dr Drysdale gave the result of his observation on 14 cases occurring in St Bartholomew's Hospital—cases in which he had examined the lymphatic glands during life or had made a post mortem examination The degree of blood change was usually moderate in all Six cases gave a total count of 6000 leucocytes or under while six other cases gave 10,000 or over Seven cases gave less than 5000 polymorphonuclears and seven cases gave over that number, seven cases gave under 2000 lymphocytes and in seven there were 2000 and over When the numbers obtained were over the normal there was an absolute increase of polymorphonuclears and lymphocytes without alteration of the respective ratios, consequently he could not regard the blood changes as symptomatic. So also in lympho sarcoma the lymphocytes might be greatly increased but usually the blood changes were trifling and negative Lymphocytosis, when it did occur, afforded no conclusive information and in the majority of cases it was at present impossible to explain even tentatively an increased number of lymphocytes in the circulation

Dr W. G MACCALLUM (Baltimore) then read a paper entitled

The Relation of the Lymphocyte to the Lesions of Typhoid Fever

Referring first to the presence in typhoid fever of very large cells in the lymphoid structures of the intestine and mesentery to which the name "typhuszellen" had been applied, he pointed out that these had been described by some workers as swollen lymphoid cells become motile and phagocytic, and by others as proliferated and desquamated endothelial cells derived from the fixed cells lining the reticulum of lymph glands, &c, or even of the venous channels—a proliferation due, according to Mallory, to the action of diffusible toxin. Examination of the blood during the height of the disease showed that there was undoubtedly a definite leukopenia due to a decrease in the polymorphonuclear leucocytes, whilst after an initial fall the relative and absolute numbers of lymphocytes were greatly increased. Dr. MacCallum's observations on the condition of the blood-forming organs in typhoid fever were chiefly based on the study of a fatal case of meningitis occurring during a typical attack of typhoid fever (from which a pure culture of the bacillus typhosus was obtained from the cerebro-spinal fluid drawn off during life by means of lumbar puncture), in the course of which it was found that in a simple tissue such as the pia, possessing normally but very little lymphoid tissue, infection with the typhoid bacillus would produce abundant appearance of lymphoid and allied cells in addition to other changes. Noting the uniform appearance and small size of the lymphoid cells in Peyer's patches he contrasted these with the large cells possessing similar nuclei found in considerable numbers in the lymphoid tissue of the intestine and incidentally mentioned that he had traced their development into very large cells indeed. In typhoid fever there was a distinct chemiotactic influence over the lymphocytes which responded by wandering out of the vessels and into the tissues which were exposed to the action of the toxin, and the increased demand was met by the increase and new formation of lymphoid cells in the bone marrow.

Dr. A. R. FERGUSON (Glasgow) read a paper on

The Relation of Lymphocytosis to Small-pox,

in which he showed that as a result of his study of the leucocytic changes occurring in the blood, and therefore reflected in varying degree by the different body tissues, there was (in variola) an excessive production of cells of the lymphocyte and smaller hyaline classes. These were found in very high proportions in the blood and in the skin; in fact, in the skin they formed a notable constituent of the exudation in the earlier stages of the eruption. In the blood, however, they reached their highest proportions, after the virus had presumably left the blood to enter the skin. These changes were accompanied by considerable activity of the lymphocyte-producing tissues throughout the body. According to Dr. Ferguson the subcortical lymphoid follicles of the lymphatic glands were chiefly concerned in the process, although the Malpighian bodies of the spleen also played a contributory part in producing the lymphocythæmia. Cells of the neutrophile class, on the contrary, underwent a progressive diminution relatively, any initial activity on the part of the bone marrow being soon replaced by a passive condition or even in severe cases by one in which all the leucoblastic elements were destroyed.

Dr. T. HOUSTON (Belfast) read a paper on

Lymphocytosis, with Special Reference to the Rôle of the Lymphocyte in Leukæmia,

in which support for the contention that all the cells of the lymphocyte groups, both typical lymphocytes and large mononuclear cells, had their origin in the lymphatic tissues generally was found in the fact that different types of lymphocytes were represented in some cases of lymphatic leukæmia, for the essential morbid change in this disease was excessive lymphatic proliferation. The large mononuclear cells so often represented in large numbers in cases of lymphatic leukæmia were regarded as undoubtedly amœboid and phagocytic and evidence was adduced that even lymphocytes proper possessed some degree of motility. Commenting on the clinical resemblance and similarity of the blood pictures of both spleno-medullary leukæmia and lymphatic leukæmia to septic processes Dr. Houston quoted first a case of acute sepsis and then a case of pneumonia in which the blood pictures closely simulated spleno-medullary leukæmia and lymphatic leukæmia respectively. It was also pointed out that sepsis might produce a leucocytosis which in the child was mainly a lymphocytosis and in the adult mainly a polymorphonuclear leucocytosis, and contrasted with the leukæmias which in early life were mainly of the lymphatic type, while those of the adult were characterised by an increase of the granular cells—myelocytes and polymorphonuclears. Referring to the cases of "mixed-celled" leukæmia which had been described by Wolff the comparatively common occurrence of mixed-celled leucocytosis in children was mentioned, Dr. Houston's observations confirming those of Wolff and others.

Dr. C. H. MELLAND (Manchester) read a paper on

The Lymphocyte in Leucocythæmia,

which was illustrated by an excellent series of coloured lantern slides. He pointed out that in the chronic lymphatic form of leucocythæmia the majority of the lymphocytes had the same character as normal small lymphocytes and doubtless originated in the lymphatic glands, in which there was evidence of increased proliferation; and also in the bone marrow, where the granular cells were replaced by lymphocytes. In acute leucocythæmia, on the other hand, the lymphocytes met with in the blood had very different characters, the cells were very much larger, the nuclei were round or oval, and the narrow zone of cytoplasm stained more or less deeply basophile. In spleno-medullary leucocythæmia large lymphocytes were present in considerably increased numbers in addition to the myelocytes with neutrophile granules. In Dr. Melland's opinion, there was a degradation in the character of the cells in the blood; the myelocyte was a less highly differentiated cell than the polynuclear neutrophile, and these large lymphocytes represented a further retrograde step. That this degradation might be progressive was evidenced by the fact that the blood picture of spleno-medullary leucocythæmia might be replaced by that of lymphatic leucocythæmia in the course of the disease, though the reverse condition had never been recorded.

Dr. T. GILLMAN MOORHEAD (Dublin) then communicated a

Preliminary Report on some Investigations into the Etiology of Leukæmia.

After briefly reviewing the parasitic theory of Löwitt and mentioning the hæmamœba leukæmiæ magna of that author, he referred to the inconstant occurrence of streptococci in the blood of leukæmia patients and then passed on to a discussion of the toxic theory which, however, was not necessarily antagonistic to the parasitic theory. The points in favour of the view that a toxin stood in etiological relationship to the disease were summed up: (1) many cases were preceded by some other disease which had lowered the general resistance of the organism; (2) inflammatory conditions of the mouth, stomach, and intestines frequently preceded or accompanied the disease; (3) peptones and uric acid could be found in the blood of leukæmia patients and said to be accompanied by excess of peptones in the spleen; (4) repeated injections of peptones caused continued leucocytosis in animals; (5) there was lowered coagulability of the blood; (6) evidence in the urine of increased breaking down of tissue, together with deficiency of metabolism; (7) the occurrence of capillary hæmorrhages; and (8) the occurrence of areas of necrosis in various tissues. As the result of the examination of 135 grammes weight of lymph glands obtained from a patient suffering from the lymphatic form of leukæmia, Dr. Moorhead after precipitation with alcohol was able to extract a substance with saline solution, a substance which produced a marked fall of blood pressure in rabbits. This depressor substance, as shown by control extracts from normal glands, was not a normal constituent of ordinary lymphoid tissue. The depressor substance was possibly a specific toxin because continuous injection of the extract containing it produced marked changes in the hæmopoietic tissues in rabbits—changes not confined to any one of those tissues but involving them all, and the rapid development of the changes was ascribed to the large quantities of toxin injected on each occasion.

One of the secretaries of the section then read a paper by Dr. F. G. BUSHNELL (Brighton) on

The Rôle of the Lymphocyte,

in which the belief was expressed that the large lymphocyte was younger than the small, that the granular myelocyte or marrow cell formed granular cells mainly, the lymphoid cell of adenoid tissue producing non-granular cells. Lymphocytosis was stated to be physiological in infants and young children, in pregnancy, lactation, and following digestion; it accompanied pathological conditions such as anæmia, leukæmia, sarcomatous growths, bacillary diseases, syphilis, &c.—in fact, it always occurred in conditions in which nutrition and metabolism were at an unusual balance, and in general terms lymphocytosis might be interpreted as indicating response to disturbances of lymphoid tissues by physiological or by toxic agencies. The paper then discussed the relationship of lymphocytosis to various pathological conditions, such as granulation tissue formation and small round celled sarcomata, the anæmias and leukæmias, the points being illustrated by a selected series of blood counts from typical cases

On the conclusion of the day's sitting several highly interesting demonstrations were given The first, by Dr A E WRIGHT (London), consisted of a demonstration of the Preparation and Use of the Collecting and Measuring Pipettes (simple and "throttle") which he had introduced for blood estimations serum examination, routine bacteriological work, &c The second, by Dr R N SALAMAN (London), was a demonstration of the Reservoir Action of the Nutmeg Liver in Cardiac Disease, illustrated by diagrams and three colour process lantern slides, adducing reasons for regarding the liver as a safety valve for the right heart which by continued use lost its value and shortened very greatly the field of cardiac response —Dr I WALKER HALL (Manchester) then demonstrated the Methods of estimating Purin Bodies by Means of his Apparatus known as the Purinometer

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LARYNGOLOGY AND OTOLOGY

WEDNESDAY, JULY 27TH

This section met under the presidency of Mr CHARTERS J SYMONDS (London) A discussion on

The Treatment of Non Suppurative Disease of the Middle Ear

was opened by Dr URBAN PRITCHARD (London) and Dr THOMAS BARR (Glasgow)

Dr PRITCHARD classified the conditions included under non suppurative disease of the middle ear for the purpose of [illegible] the following divisions [illegible] media, (2) early stages of [illegible], (3) advanced stages of the same, (4) middle ear adhesions the result of former acute inflammation, and (5) sclerosis resulting from disease of the bony capsules inclosing the internal ear and forming the inner wall of the tympanic cavity

1 *Treatment of acute otitis media* —In the earlier stages, he said, gentle, not forcible, politzerisation (not catheterisation) would often relieve the pain at once and tend to cut short the attack Counter irritation behind the ear was always most valuable and would often arrest the *otitis* and relieve the pain Instillations were occasionally advisable and when used should be strong anodyne solutions—for example, cocaine or morphine in an antiseptic medium, glycerine of carbolic acid had been strongly recommended, also adrenalin with cocaine Heat in the form of very hot fomentations or hot bran bags was very useful, leeches in front of, and below, the ear were valuable in very acute cases Incision of the membrane was called for when there was marked bulging, the meatus must be purified and afterwards dressed antiseptically to avoid suppuration Purgatives were nearly always necessary Pharyngeal treatment was usually required but nasal douches or irrigations must absolutely be avoided As regarded after treatment politzerisation should always be employed, it would restore the hearing and prevent adhesions If adenoids were present they should be removed

2 *Treatment of the early stages of chronic non suppurative catarrh*, in which there was exudation into the mucous membrane and from its surface with resulting stenosis of the Eustachian tube and more or less fluid in the tympanic cavity In this group of cases Dr Pritchard said that politzerisation was preferable to catheterisation, it should be repeated at intervals of one two, or three days according to the relief obtained, as ascertained by the amount of improvement in the hearing it should not be continued when *it increased the deafness Incision of the membrane* might [illegible] *and in the tympanic* cavity [illegible] condition Local medici[illegible] sterile alkaline nasal irrigation (e g, borax and sodium bicarbonate) was to be preferred to the nasal douche as the latter occasionally produced acute otitis, inhalations of pine oils eucalyptus oil, or, still better, of fumes of ammonium chloride were most valuable Climatic treatment was important, damp situations should be avoided and high, dry, and sunny positions should be selected, warm and well drained seaside resorts were good, whereas cold, damp seashores with a northern aspect must be avoided High sunny Alpine valleys were often very beneficial, but on rapidly descending from these Valsalva's inflation should be practised Early and continued *treatment of these stages of catarrh* was most important and would often prevent the advanced stages

3 *Treatment of advanced stages of middle ear catarrh* —This he considered was much less satisfactory on account of the adhesions causing retraction of the membrane and fixation of the membrane and ossicles Catheterisation was often preferable to politzerisation, but the value of courses of repeated inflations had been much over-rated, patients, he said, should be warned against the constant recourse to Valsalva's method of inflation, at the same time, cautiously employed, it was of value Gentle suction by means of Delstanche's masseur was occasionally of value but might easily be overdone The Eustachian bougie had been over valued, the objection to its use were firstly the risk of injury to the delicate ciliated mucous membrane, the narrow part of the tube being bony it could not be dilated except at the expense of this mucous membrane Secondly, in advanced cases the loss of hearing power was almost always due to changes in the tympanic cavity and not in the Eustachian tube Speaking of operations he said that all these up to the present had been futile in this particular group of cases As regarded local medicinal treatment, nasal irrigations of sterile alkaline and saline solutions were of much value Inhalations of the ammonium chloride fumes with cautious Valsalva's inflation to introduce them through the Eustachian tube formed a most valuable treatment, but long continued use with intervals of rest was necessary Injections through the Eustachian catheter were much employed by some surgeons and were occasionally of value, probably a sterile solution of sodium bicarbonate was the most efficacious Speaking of internal medicinal treatment, he said that occasionally when the mucous membrane was glazed and dry small doses of potassium iodide with ammonia—so as to produce slight symptoms of coryza—combined with some form of inflation would yield excellent results Turkish baths were of value in some of the less advanced cases

4 *The treatment of middle ear adhesions of old standing* —This he considered was most unsatisfactory, operative interference had up to the present signally failed though there might be a future for it In fact, at present these cases only made the surgeon regret that active treatment was not adopted directly after the acute inflammation which resulted in the adhesion

5 *Treatment of sclerosis* —This he said was still more hopeless and in a pure case no treatment was of any avail—mechanical medicinal operative, and climatic treatment were alike useless All that one could do was to use such treatment as would keep up the general health in the hope that thereby a tendency for the disease to become arrested would be established Aurists had yet to learn whether the high frequency electric treatment would yield any results In conclusion, Dr Pritchard said he knew of no condition in which treatment should be considered more judicially, avoiding hasty conclusions for or against any proposed treatment, and that they ought certainly not to judge harshly of over-enthusiastic *confrères* who might be unduly vaunting some new process having been carried away by a few apparent successes

Dr THOMAS BARR limited himself to the non exudative or dry forms of the disease whatever their origin might have been The problem to be dealt with, he said, was more difficult than in the exudative forms there were usually changes and products in the middle ear which might have originated long before sometimes during early childhood in acute inflammation in simple exudative catarrh, or, worst of all in gradual and scarcely perceptible changes of a dry nature from the beginning The scientific character of the treatment was faulty because of the deficiency of knowledge of the anatomical changes existing in *any given tympanum* and efforts of treatment were on that account bound to be often empirical and to some extent experimental The field of treatment was large but not proportionately fruitful It was manipulative, operative medicinal, hygienic and climatic Amidst the diversity of opinion regarding the value of the different methods inflation in some form or other, but especially in the form of politzerisation was probably practised by all otologists In view of the fact that it was rarely possible to determine the precise conditions of the intra tympanic structures in any given case one was not often justified in excluding the possibility of doing good until the test of treatment, especially the test of effective inflation had been applied Any increase in the deafness or in the intensity of the subjective sounds called for an immediate halt, whereas improvement, even although comparatively slight, would encourage the continuance of these efforts. Inflation should not be practised too frequently, seldom more so than every second or third day; too prolonged treatment was bad; after three or four weeks there should be a pause of one, two, or three months, and in some cases short courses of such treatment might be required at intervals during the whole course of a person's life. Patients or friends could usually, be taught to inflate efficiently, but then definite directions as to the frequency and duration of the treatment should be given with the warning that if any increase in the deafness or subjective sounds be observed the fact should be immediately reported. Valsalva's method of inflation, he considered, was rarely permissible because the patient was either unable to inflate his tympanum or did great mischief by unduly frequent repetition, so that it was not uncommon to find a patient repeating it before every interview, perhaps 20 or 30 times a day, and acquiring such dexterity that the act was scarcely perceived by the onlooker; the improvement in hearing in consequence became less and less, and shorter and shorter, with gradually increasing mischief to the function of the organ. Efforts to force vapours through the Eustachian tube into the tympanum were generally futile. Probably the best results were obtained by the sudden impact of air yielded by Politzer's method, and catheterisation was limited to the cases in which the introduction of solutions or vapours into the middle ear was indicated or where stricture existed in the Eustachian tube. Applications to the inside of the tube itself through the medium of the catheter were productive of good. Paroleine solutions of iodine, menthol, camphor, cocaine, and adrenalin might be introduced through the catheter with good effect by means of an atomiser in catarrhal swelling of the Eustachian tube. The treatment of organic stricture of the Eustachian tube was very unsatisfactory and an attempt to dilate forcibly such a stricture by means of some kind of bougie seldom led to a good result. In regard to the value of nasal treatment, he said that probably most otologists would approve of operating upon the naso-pharynx when post-nasal adenoids existed, without, however, expecting such brilliant results as in the case of the exudative catarrhs. There could be no doubt that nasal obstruction, especially when severe, tended to exercise an injurious influence upon the tympano-Eustachian apparatus. There was a good deal of agreement as to the propriety of operative or other treatment when there were hypertrophic changes in the nasal passages, but the existence of a small spur or knot on the septum, interfering very little or not at all with nasal breathing and producing no special tendency to catarrhal attack, should probably be ignored. There were cases in which intranasal operations had seemed to aggravate deafness, perhaps through nervous shock or from the entrance of blood into the Eustachian tube, while the nasal douche might in the absence of careful precautions be productive of much harm. The so-called pneumatic massage of the tympanum along with inflation was suitable; even in sclerosis it frequently allayed tinnitus. The use of friction with the aid of a stimulating ointment such as camphor, oil of peppermint, and vaseline, applied behind and below the ear in the form of a kind of massage, seemed often to be productive of good. Speaking of the value of operative treatment on the tympanic membrane and intra-tympanic structures, he said that with a narrow meatus many of such operations were well-nigh impossible, while in the absence of an exact knowledge of the pathological conditions in the tympanum the operator was in the position of one groping in the dark. An artificial perforation with a galvano-cautery might improve the hearing or relieve the tinnitus, if such an opening could be made permanent. In proceeding to the other and deeper operative measures there was a greater danger of injuring rather than of improving the hearing. Electrical treatment, he said, long in abeyance in aural therapeutics, had been again revived in the form of high-frequency currents. The results had been sufficiently encouraging to justify further trial, although no doubt the treatment was entirely empirical. Dr. Barr, in conclusion, offered suggestions for further investigation of the subject and considered that by a well-defined and pre-arranged plan of working it would be possible to determine the true value of individual methods of treatment.

In the general discussion which followed

Dr. ADOLPH BRONNER (Bradford) advocated constitutional as well as local treatment. He expressed himself opposed to the use of Politzer's bag on account of not being able to obtain by means of it uniformity of pressure. The practice of intrusting the use of the bag to patients he considered should be condemned. In the divergence of opinions as to nasal obstruction being a factor in the production of the varieties of deafness under discussion he thought there was room for charity and mutual concessions.

Dr. MARCEL NATIER (Paris) demonstrated a series of diagrams illustrating the treatment of deafness by means of tuning forks.

Dr. J. WALKER DOWNIE (Glasgow) recommended treatment of adhesions of ossicles by means of Valsalva's method as beneficial when gently applied; he also was in favour of a nebuliser in place of Politzer's bag. Speaking of the treatment by high-frequency currents, he said that out of a dozen cases which had been treated for him only one had improved after daily applications for 15 minutes extending over six months, a very serious tax upon the patient.

Mr. F. MARSH (Birmingham) advocated the removal of anything which interfered with free drainage and free airway. He recommended oily injections. His experience of high-frequency currents was unfavourable and he had seen more harm than good from Valsalva's method.

Dr. W. MILLIGAN (Manchester) considered that otology should be made a compulsory subject in medical education. He spoke of the value of physiological rest in middle-ear catarrh. Seaside air he considered injurious but high altitudes beneficial. In sclerosis he had found iodide of potassium of value. Patients he had observed under treatment with high-frequency currents had become rather worse than better.

Dr. L. H. PEGLER (London), speaking with reference to the exudative variety, expressed himself in favour of leaving the fluid in the tympanic cavity to be absorbed and of not doing a paracentesis. Regarding the diagnosis it was often uncertain, the patient's condition being a mixed one. Allowance had to be made for the neurasthenic element in the tuning-fork test.

Dr. R. H. SCANES SPICER (London) spoke with reference to nasal obstruction as a factor in the etiology.

Dr. H. SMURTHWAITE (Newcastle) said that his experience had been similar to that of the previous speaker in the frequency of nasal obstruction as a factor in the deafness.

Dr. E. B. WAGGETT (London) was in favour of educating any hearing power that might be left and laid stress on the importance of differentiating a sclerotic condition of the middle ear at the first visit of the patient.

Dr. C. E. SHAW (Belfast) emphasised the necessity of early treatment. The vibration treatment he regarded as altogether useless.

Mr. C. H. FAGGE (London) considered that more definite knowledge of the pathology of the subject was required. He was also opposed to patients being intrusted with Politzer's bag.

Mr. G. W. HILL (London) spoke favourably of Delstanche's masseur for relieving tinnitus and improving the hearing.

Mr. A. J. BRADY (Sydney, N.S.W.), speaking of the value of operative measures, cited a case in which hearing was improved by removal of the drum and ossicles.

Dr. J. E. NEUCOMB (New York), speaking of treatment by electrolysis, said that the younger practitioners in New York had used it and had recorded good results but the senior men had left this form of treatment alone.

Dr. W. JOBSON HORNE (London) expressed the hope that early steps would be taken to adopt Dr. Barr's suggestions for the scientific investigation of the subject they had been discussing. It was now half a century since Toynbee so largely contributed to their knowledge and Dr. Horne thought he was not over-stating the matter in adding that during that interval but little had been done by means of scientific research to advance their knowledge of the non-exudative or dry forms of ear disease. He was aware of the obvious difficulties, but one case completely worked out would be of greater help than a mass of empirical and experimental treatment.

The PRESIDENT, summing up the discussion, endorsed Dr. Barr's suggestions.

The openers of the discussion replied.

TROPICAL DISEASES.

WEDNESDAY, JULY 27TH.

The President of the section, Dr. ALEXANDER CROMBIE, C.B., Lieutenant-Colonel I.M.S. (retired), delivered an introductory address entitled

The Fallacy of Finality.

Referring to a paper on Indian Fevers which he had read at the Indian Medical Congress of 1894, Dr. Crombie stated that his attempt to differentiate certain fevers of the continued type had been freely criticised and he intended to refer to the subject again. Clinicians had been, on the whole, favourable to the view which he then took, but bacteriologists had been opposed to it. "Ague," according to Dr. Crombie, was not the most prevalent type of fever; according to his Indian experience the commonest type of fever was a "single paroxysm fever" of a few hours' or a few days' duration, but it was a single paroxysm and had no tendency to recur. If it lasted for a few hours only it was termed "ephemeral fever," if for a day or two "febricula," and if for several days "simple continued fever." In fever of this kind periodicity was wanting, the patients recovered without quinine, and malarial parasites were not present. Captain Leonard Rogers differed in this point, basing his argument upon mononuclear increase; but this increase had been shown to be present in other diseases besides malaria. An inquiry by Captain S. P. James led him to the conclusion that many cases admitted as malarial in Indian hospitals were not due to malaria, no malarial parasites being found in the blood. Mr. Arthur W. Powell bore similar testimony and it would seem that many of the cases of febricula and simple continued fever in India were non-malarial. The form of fever styled "non-malarial remittents" by Dr. Crombie and lasting in some cases six weeks was pronounced by the late Dr. Hughes and Dr. E. Charles to be Malta fever, but this contention had not been upheld. Kala-azar was also at one time thought to be Malta fever but this position had also proved false. At one stage of investigation it was held that every fever that was not malarial must be typhus, enteric, or Malta fever. The leucocyte count seemed quite recently in Captain Rogers's hands to settle the question and a fever showing an increase of the percentage of lymphocytes was held to indicate typhoid fever, and an increase of the large mononuclears malaria, but the increase of mononuclears had been found in blackwater fever, in the spotted fever of the Rocky Mountains, and in the fever associated with Leishman's bodies. In regard to non-malarial remittents being typhoid fever the laboratory evidence at their disposal consisted chiefly in the acceptation of Widal's reaction but this was a wholly inconclusive argument. A species of fever which ran a three or four weeks' course and was well known in India and which was usually asserted to be typhoid fever Dr. Crombie chose at one time to term "urban fever" as occurring for the most part in large towns; he was now inclined to regard it as a peculiar form of typhoid fever. There were several forms of enteric fever and to the India variety he would assign the name "bastard typhoid." The fallacy of finality was amply borne out and Dr. Crombie especially wished to sound a warning note concerning "the fallacy that every step made in advance is final, and that every part of medicine must be brought into line with it for the reason that there is nothing beyond."

Colonel **DAVID BRUCE**, F.R.S., R.A.M.C., opened the discussion on

Trypanosomiasis.

After referring to the state of knowledge at the meeting of the British Medical Association in 1903 and what they knew of trypanosomiasis and sleeping sickness now, Colonel Bruce stated that (1) the trypanosoma found in the blood of natives on the West Coast of Africa and in Uganda and those found in cases of sleeping sickness were identical; (2) the so-called trypanosoma fever was nothing but the first stage of sleeping sickness; (3) neither the native nor the European was immune to this disease; (4) the mortality in both coloured and uncoloured races was 100 per cent.; (5) up to the present no evidence had been brought forward to show that any of the lower animals took any important part in the spread of human trypanosomiasis; (6) human trypanosomiasis was conveyed from the sick to the healthy by means of a biting fly, the glossina palpalis; (7) several members of this genus were able to convey the virus from the sick to the healthy, thereby constituting a danger that this disease might spread into British East Africa and other tsetse fly zones; (8) there was no proof that other genera than glossina, such as stomoxys and tabanus, could convey this trypanosome; (9) there was no proof that trypanosoma Gambiense passed through any metamorphosis in glossina palpalis but that the transference of the parasites by this fly from one animal to another was purely mechanical; (10) all the stages of the development [illegible] the human host [illegible] words, that the [illegible] the intermediate host for its continuance; and (11) to prevent sleeping sickness the movement of natives from sleeping sickness areas into any part of the country where any species of tsetse fly was found should be prevented as far as possible, and, again, the movement of healthy natives into sleeping sickness areas should be prevented where possible.

Dr. **DAVID N. NABARRO** (London) said that after Colonel *Bruce left Uganda Captain E. D. W. Grieg and Dr. Nabarro* himself immunised several monkeys against the blood and the cerebro-spinal fluid trypanosoma and found that the animals were then immune against the cerebro-spinal and the blood trypanosoma respectively, though not against the animal trypanosomata met with in Uganda. In regard to the conclusion come to by Colonel Bruce that "so-called trypanosoma fever is the first stage of sleeping sickness," Dr. Nabarro did not think that they were quite justified in going so far nor did he think it would always prove to be the case. The trypanosoma might disappear altogether from the peripheral blood of a patient, as it did in some monkeys and dogs experimented on. Cases of sleeping sickness in the pyrexial or so-called first stage of the disease suffered from remittent or intermittent fever, but the converse could not be maintained with certainty—viz., that trypanosoma fever was always the first stage of sleeping sickness. Man might possibly become immune after infection with trypanosoma, as in the case of monkeys and dogs and other animals. Concerning infection by lower animals, Dr. Nabarro said that there was a disease amongst oxen in Entebbe in Uganda associated with a trypanosome which if not identical with, yet closely resembled, the human trypanosoma and it was just possible that these oxen might serve as a subsidiary host in addition to infected natives whence the glossina palpalis obtained its supply of trypanosoma. This trypanosome became very scanty in the blood of sick oxen towards the end of life and in one case could [illegible] even [illegible] of the [illegible] artificial inoculation although they did not suffer from undoubted sleeping sickness symptoms. Dissection of flies at varying intervals after a feed yielded interesting results which might be summarised as follows. The trypanosoma of sleeping sickness was actively motile in the stomach contents of the fly 71 hours after the feed; the trypanosoma found at Jinga lived 100 hours, the East African five and a [illegible] stomoxys [illegible] the East [illegible] l.

[illegible] r **DUTTON** (Birkenhead), and Dr. **JOHN L. TODD** communicated a paper on

Human Trypanosomiasis and its Relation to Congo Sleeping Sickness.

The paper was described as an abstract from the second progress report of the expedition of the Liverpool School of Tropical Medicine to the Congo, 1903. The full report was published in the Thompson-Yates and Johnston Laboratory Report for July, 1904. During the expedition the investigators found at the Leopoldville Hospital that out of 465 natives coming from all parts of the Upper Congo as well as the districts round Leopoldville 54 had trypanosomes in their blood. In the Gambia, on the other hand, out of 1043 natives examined six only were found with trypanosomes in their blood. Mild and severe types of sleeping sickness were met with but there was no well-defined demarcation between them, but for descriptive purpose they were grouped as (*A*) cases with no definite symptoms of illness; (*B*) cases with few symptoms; and (*C*) fatal cases showing well-marked symptoms, the most notable being fever, lassitude, weakness, and wasting. They subdivided group *C* into (*a*) fatal cases showing no sleep symptoms and (*b*) fatal cases showing sleep symptoms, and remarked that deep sleep, continued sleep, and lethargy—symptoms described as characteristic of sleeping sickness—were not features of the Congo disease. Although one epidemic of sleeping sickness was recorded in the Congo district they did not meet with an epidemic of the disease during their investigations. The Congo type of case bore a close resemblance to some of the cases described by Bruce, Greig, and Nabarro on the Victoria Nyanza after the epidemic wave had passed that region. Concerning secondary infections and complications it was found that secondary bacterial infections seemed to determine the fatal issue of many cases of Congo sleeping sickness; the complications or obvious secondary infections met with were purulent meningitis, purulent pleurisy and pneumonia, pneumonia and localised tubercle of the lung, localised gangrene of the lung, enlarged caseating and breaking-down glands in the thorax and abdomen (no tuberculous lesions in the organs—tubercle bacillus in glands was seen in one case), dysenteric ulceration of the large bowel (perforation in one case), universally adherent pericardium (recent), and infiltration of pus in femoral, inguinal, and intestinal iliac glands (gonorrhœa). These observations corresponded with the lesions described as met with in Uganda. The authors further remarked (*a*) upon the periodicity and frequency of recurrence of the parasites in the peripheral blood; (*b*) the number of parasites appearing in the blood—in two cases a large increase was noted to occur during the few days immediately preceding death; (*c*) the sudden disappearance of the parasite from the finger blood; (*d*) the symptoms associated with the increase of the parasites in the blood—a rise of temperature was not necessarily associated with an increase of parasites in the blood and the number or constant presence of the parasites in the peripheral blood would seem to bear no relation to the severity of the disease; (*e*) the occurrence of parasites in serous fluids—in hydrocele fluid parasites were found; (*f*) the occurrence of the parasites in tissues and fluids after death—parasites were found in the pericardial, pleural, and peritoneal fluids when examined fresh; (*g*) animal experiments—rats, mice, guinea-pigs, rabbits, and monkeys were injected with human trypanosomes taken from cases of Congo sleeping sickness, both in its early and its latest phases (no animals inoculated with material in which trypanosomes were seen, taken post mortem from cases of trypanosomiasis, have ever become infected); and (*h*) transmission experiments—both in the Congo and Gambia the guinea-pig was, perhaps, the laboratory animal most susceptible to trypanosoma Gambiense.

Dr. CHRISTY read a paper upon

The Cerebro-spinal Fluid in Sleeping Sickness (Trypanosomiasis),

being part of the second progress report of the expedition from the Liverpool School of Tropical Medicine to the Congo, 1903, and published in the Thompson-Yates and Johnston Laboratory Report, August, 1904. Dr. Christy stated that 104 lumbar punctures were made. Of 64 cases operated on 54 were proved to be cases of sleeping sickness by the discovery of trypanosomes in the blood, the cerebro-spinal fluid, or the hydrocele fluid. Of the 54, parasites were found in 34 of them sooner or later in the cerebro-spinal fluid. In the Congo disease there appeared to be an endless variety of types. In most cases sleep was absent, in some dulness and apathy were prominent, in others nervous symptoms and mania were conspicuous, while a proportion of cases had only progressive emaciation and fever. The presence of parasites in the cerebro-spinal fluid apparently led to increase the gravity of the case and predisposed to new complications. Dr. Christy described in detail the best method of performing lumbar puncture.

Sir PATRICK MANSON (London) stated that Colonel Bruce's contention that the trypanosoma Gambiense was the cause of sleeping sickness was founded principally on an epidemiological basis. Experimental evidence was wanting, inasmuch as the small-celled organism associated with the perivascular spaces of the brain in cases of death from sleeping sickness was not found after any infection of animals yet reported. Colonel Bruce's epidemiological facts applied to only a very limited region and, as in the case of the suspected filaria perstans, it might be proved that trypanosomes did not correspond in their distribution with that of sleeping sickness. Quite recently it had been stated that in the territory at the south end of the Victoria Nyanza the entire population was infected with trypanosomes but sleeping sickness was unknown there. If this be true then the trypanosoma could not be the only cause or even a cause of sleeping sickness. The trypanosome would appear to be an element in the causation but the determining cause of the pathogenic condition was bacterial. A combination of Castellani's first and last etiological views would therefore seem to be the correct one. Sir Patrick Manson mentioned the case of a patient in whom all the clinical symptoms of trypanosomiasis were present and in whom trypanosomes were found in the blood who was now quite well, although it was three years since the illness declared itself.

Dr. LOUIS SAMBON (Naples) remarked that he could not regard the glossina to be merely a mechanical carrier of the disease trypanosomiasis. If this were so, how was it that other biting insects, such as the stomoxys and the tabanus, did not also convey the disease? The glossina would seem to be the intermediate host of the parasite.

Mr. H. F. CONYNGHAM (demonstrator at the London School of Tropical Medicine) read a paper entitled

A New Trematode of Man (Amphistomum Watsoni).

Mr. C. F. Watson sent to the London School of Tropical Medicine from North Nigeria six trematodes from the small intestine of a negro who had died from starvation and diarrhœa. This proved to be a species of amphistome totally unlike the gastrodiscus hominis (Lewis). Professor Blanchard of Paris had pronounced the trematode to be a new species. Post mortem the parasites were found in the duodenum and upper part of the jejunum and a few had reached the large intestine. The man was reported to be fond of raw meat. The animals were pear-shaped, flattened ventrally, and indented posteriorly at the margin of the posterior sucker. The anterior sucker was terminal and ventral. The genital pore lay about a quarter of the length of the parasite from the anterior end. The cuticle was ribbed transversely, especially on the ventral surface. The worms measured eight millimetres in length and five millimetres at the point of greatest breadth; the greatest thickness was about four millimetres. Ova as seen in the uterus measured 130μ by 75μ. The parasite was found in enormous numbers in the upper part of the small intestine and might have been the cause of death seeing that in some of the lower animals serious illnesses were occasioned by other species of the same genus.

Captain LEONARD ROGERS, I.M.S., contributed a paper on

The Treatment of Snake Bites.

The class of colubrine (including the sea snakes hydro-ophidæ) by their venom killed by paralysing the respiratory centres and to a less extent the motor end plates of especially the phrenics. The viperine class (including true vipers) caused by their venom a rapid failure of the circulation due to paralysis of the central vaso-motor centre in the medulla. Calmette's antivenin serum was only active against colubrine venoms. Experiments with the antivenin made by Burroughs, Wellcome, and Co. from cobra venom showed that when given subcutaneously it had little or no effect, but when given intravenously it acted well. Captain Rogers described the local treatment with permanganate of potassium. In his experiments he ligatured the limb above the seat of injection of the venom, an incision was then made into the seat of the injection, and solid crystals of permanganate of potassium were rubbed into the spot with sterile salt solution. Recoveries were the rule when the ligature was quickly applied above the part bitten and the lethal dose was not too large. This beneficient result was obtained in both colubrine and viperine poisons. The local use of the permanganate with, in the case of colubrine poison, antivenin injected intravenously, and in the case of viperine poison by adrenal extract injected subcutaneously, would appear to be encouraging methods of treating snake poisons.

Mr. ERNEST E. AUSTEN (Zoological Department of the British Museum) read a paper entitled

Supplementary Notes on the Tsetse Flies (Genus Glossina, Wiedemann).

In addition to the seven species of tsetse flies already known an eighth species had recently been described and named glossina Decorsei (Brumpt). The new species was obtained by Dr. Decorse from the banks of the River Shari and the shores of Lake Chad. It was believed that nagana was carried by five of these species. Mr. Austen described glossina palpalis, glossina pallicera, glossina morsitans, glossina tachinoides, glossina pallidipes, glossina longipalpis, glossina fusca, and glossina longipennis. Mr. Austen believed that, in addition to trypanosomiasis in its various forms, tsetse flies must play an important part in the dissemination of other diseases due to hæmatozoa. Brumpt stated that in certain districts on the Upper Congo a filariasis due to filaria volvulus was very widely spread; the disease occurred only among the canoe-paddlers—*i.e.*, among those who were most exposed to the bites of tsetse flies—and Brumpt wrote that the only cases hitherto observed had been in the regions (such as Nigeria and Dahomey) in which tsetse fly abounded.

Dr. CHRISTY, Dr. DUTTON, and Dr. TODD communicated a paper on

The Congo Floor Maggot, a Blood-sucking Dipterous Larva found in the Congo Free State.

This contribution was part of the report of the expedition from the Liverpool School of Tropical Medicine to the Congo, 1903. These maggots lived in the dust-filled cracks and crevices of the mud floors of native huts in the cataract regions of the Congo. Many of the larvæ found contained bright-red blood and they were most numerous where the natives slept on floor mats and there seemed no doubt that they bite at night. These larvæ were found at Leopoldville all over the Luteto and surrounding districts and they were reported from San Salvador in Portuguese territory, on the Congo at Matadi in the cataract region, and at Johumbiri, 150 miles above Stanley Pool. The flies met with in the huts and supposed to be developed from the floor maggots were submitted to Mr. Austen of the British Museum who recognised them as specimens of *Auchmeronigia luteola* Fabr (a species of the family muscidæ). The relationship of the floor maggot to the Auchmeronigia luteola had not been established and the possibility of the maggot being a means of diffusing trypanosomiasis was merely suggested.

Mr. T. J. TONKIN (Yapton) remarked that in the town of Kano in Northern Nigeria his servant proceeded to clear out the cracks on the part of the floor on which he was about to spread his sleeping mat. The reason for this precaution he was told was because a biting insect lived in the cracks and a specimen was shown him which in all points resembled that described by Dr. Christy.

Dr. D. E. ANDERSON (Paris) also took part in the discussion.

DENTAL SURGERY.

WEDNESDAY, JULY 27TH.

Mr. E. A. BEVERS (Mayor of Oxford) read

The Presidential Address.

He congratulated his dental colleagues on obtaining a dental section at the annual meeting of the Association. He referred to the progress which dental surgery had made—progress which on the whole had been slow but sure but which had every now and then been marked by distinct advances, one of which he considered they were taking part in that day, because by the formation of that section dentistry had taken its proper place in the fold of medicine. The influence of the section would be to encourage a broadening of their views and also to permit medical men to know more about the aims and claims of dentistry. Reference was made to the divergent views which were held on the question of education and an appeal was made to support those who believed in broadening the general portion of the curriculum. The claims made by American dentistry he ridiculed and pointed out that dentistry was catholic—the science was the same in whatever country it was practised—and that there could therefore be no such thing as a system special to one country.

Dr. W. HUNTER (London) opened a discussion on

Oral Sepsis in Relation to Disease.

He referred to the interest that he had taken in the subject, especially in relation to pernicious anæmia. Medical men took infinite precautions to protect the body against pyogenic affections but neglected the mouth as a source of infection. He was happy, however, to note that increasing attention was now being given to the subject. Much, however, remained to be done, as even in the most recent text-books no mention could be found of the influence of morbid conditions of the teeth and adjacent tissues on general health. The main trouble arose not so much from the presence of carious cavities in the teeth as from suppurative conditions of the periodontal membrane. Of the local effects of oral sepsis the first to claim attention were gingivitis and the various forms of stomatitis. Tonsillitis, too, he had found to be most severe in type when associated with septic teeth; and in his opinion in cases of throat affections occurring in scarlet fever patients a septic state of the mouth very considerably aggravated the throat trouble. Adenitis was frequently associated with carious teeth, as were otitis media, naso-pharyngeal [illegible] disease. Passing to the stomach, he [illegible] cases of septic gastritis due to streptococcal infection in which there was the foulest oral sepsis. A similar condition of the mouth he had met with in cases of septic enteritis and ulcerative colitis. In cases of typhoid fever he had performed 50 post-mortem examinations where perforation had occurred and he was of opinion that the perforation was always due to some superadded inflammation and more than possibly traceable to infection from the mouth. He thought there was reason to believe that oral sepsis was at times the focus of infection in cases of malignant endocarditis, purpuric hæmorrhage, and nephritis. Two distinct types of anæmia he had found associated with oral sepsis: (1) septic anæmia, in which there was an absence of hæmolysis, and (2) pernicious anæmia, in which there was marked hæmolysis accompanied by intense bone-marrow changes.

Mr. KENNETH W. GOADBY (London) read a short note on

The Pathology of Oral Sepsis.

Oral sepsis, he said, was a very wide term and embraced such different conditions as ordinary dental disease and a generalised stomatitis of whatsoever cause. It was therefore essential to make some sort of selection and the particular chronic diseases of the alveolus had been selected. Three chief varieties of this particular section of oral pathology might be cited as having certain clinical signs as well as some difference in their bacteriology, which allowed a preliminary classification. They were: 1. Gingivitis. This was a general or local inflammation of the margins of the gums about the teeth, not involving the alveolus or alveolar-dental periosteum. This condition was accompanied by some smell of the breath, but little or no pain. 2. Progressive periodontitis. This was a chronic inflammation of the whole of the gum and mucous membrane covering the alveolus or an atrophic condition with atrophy of the tooth sockets. There were formation of distinct gum-pockets and infection of the alveolar-dental periosteum, without definite affection of the alveolus itself, accompanied by considerable quantities of pus, either thin and filled with débris or thick and viscous. There were usually a sweetish smell of the breath and infection of the mucou glands on the inner surface of the cheek at points corresponding to the greatest amount of inflammation; there was frequently localised as well as general neuralgic pain. 3. Subacute alveolar osteitis. This was a well-marked infection of the bone in the form of rarefying osteitis often spreading to the antrum, with much granulation tissue in the sockets of the teeth and deposits of semi-cartilaginous nature on the roots of the teeth; pain was common; there was frequent exacerbation of disease around individual teeth with dento-alveolar abscess. Sinuses formed, running into the compact bone. They were often associated with chronic pharyngitis and other throat diseases. The bacteriology of the disease was as follows: 1. Gingivitis. The largest variety of bacteria were found in this condition; almost all morphological forms were to be seen on making coverslip preparations. The following might be noted: staphylococci, sarcinæ, spirilla, comma-shaped bacilli, long curved rods, short thick bacilli, long pointed bacilli, and fine threads. 2. Progressive periodontitis. (*a*) Rods 4μ to 6μ long, 0·75μ wide, associated in masses. (*b*) Threads 10μ to 20μ long, many showing a beaded appearance, with large, darkly-stained d[illegible]illus by Neisser. [illegible] thicker and stained with [illegible] egularly twisted filaments, with occasional branching. (*d*) Thick-jointed rods, sometimes giving granulose reaction. Cocci were generally found but the spirilla and comma-shaped forms, with the exception of spirochætal, were reduced in numbers. 3. Subacute alveolar osteitis. (*a*) Generally appearance of fragmented mycelium, which might stain by Gram's method. (*b*) Thick bacilli with pointed ends, the bases of the two being in apposition, not unlike gigantic sheath-forms of diphtheria bacillus. (*c*) Bacilli of diphtheria-like form (short), associated with cocci in the depths of the sockets of the teeth. Comma and spirillum forms were generally absent in this last process; although they were often increased in various forms of stomatitis they were not related to any one condition. They might be found in the throat in diphtheria, enteric fever, &c. The recent suggestion of Wright that these spirilla were a variety of trypanosome, on account of their staining reaction, was inadmissible; other bacteria also stained in the same way with the reagents used. It was thought that by inoculating pus obtained from the above diseases directly into animals some idea of the pathogenic organisms present (if any) would be obtained. The animals were inoculated subcutaneously, intraperitoneally, and intravenously. The results of these experiments were given as a preliminary report. One of the cases scheduled above was a case of pemphigus associated with acute oral sepsis. A pure culture of a bacillus was obtained from the blood drawn from the right median basilic vein. A similar bacillus was isolated from the mouth. The curious slow tissue necrosis found in some of the animals inoculated was interesting in view of the incidence of healed gastric ulcer, especially as Hemmeter remarked that "in gastric ulcer there is another kind of infection which is not accompanied by the signs of acute inflammation and is termed bacterial necrosis by some authors." The fact that many cases of oral sepsis rapidly improved with the improvement of some general disease—such, for instance, as the oral inflammation present in sprue—did not preclude by any means the mouth disease from sharing in the production of the other symptoms. It was difficult perhaps to understand the marked degree of immunity possessed by many individuals against oral sepsis, but yet many of these did ultimately exhibit evidences of chronic toxæmia; at the same time, it was difficult also to explain the mechanism of relapse in acute fevers, as well as accidental death during active immunisation of animals, with the modern conceptions of immunity. It might be concluded from a general survey of the facts touched upon (1) that a certain degree of virulence might be possessed by an organism living an apparently saprophytic existence in the mouth; (2) that inflammatory conditions had the effect of increasing the number of species as well as the total number of bacteria present; (3) that a sort of selection apparently took place but whether due to symbiosis or not it was difficult to say; (4) that mouth bacteria did at times gain access to the general blood stream; and (5) that finally the potentiality for disease of oral sepsis received considerable support from even a preliminary survey of its bacteria, perhaps pointing to its operation in even a wider rôle than was at present credited or admitted.

Mr. RICKMAN J. GODLEE (London) read a short paper on

Oral Sepsis in Relation to Surgery.

He considered it would be interesting to investigate the direct effect of toxic matter from the mouth on wounds. There was every chance of surgeons with septic conditions of the mouth infecting patients, as in the act of speaking a slight expectoration of saliva was often unavoidable. He would therefore say to surgeons, examine your mouth for the sake of your patients. The presence of oral sepsis in domestic animals was overlooked and he characterised the habit of kissing dogs as dangerous. The improvement in the results of operation on the mouth was to be attributed largely to the care now taken to render the mouth as aseptic as possible before operating and he impressed on all surgeons the necessity for carrying out this mouth hygiene. Tuberculous glands were often traceable to septic teeth and although there was a disposition on the part of some dental surgeons to retain a suspicious tooth from an æsthetic point of view, he thought that all such teeth should be removed, for a beautiful jaw was not much good if it surmounted a scarred neck. Reference was made to the severe condition occasionally following dento-alveolar abscess and a case was cited of extensive necrosis of the mandible following the removal of a molar tooth. In all operations on the alimentary track the mouth should be submitted to rigid treatment previously to operation.

Dr. DALTON spoke of some cases of malignant anæmia he had met with associated with oral sepsis. He discussed the question whether the anæmia was due to the sepsis or *vice versâ* under three heads: (1) priority of oral sepsis or anæmia; (2) whether the anæmia passed away with removal of the teeth; and (3) why septic mouths produced anæmia and similar conditions of the pleura and other cavities did not. He seemed to incline to the view that the anæmia was traceable, at any rate in some cases, to the oral sepsis.

Dr. STCLAIR THOMSON (London) said that he always refused to operate on the throat until the nose and teeth had been placed in order. With reference to the amount of pus that was swallowed in cases of oral sepsis he thought an idea could be gained from a case recently under his care. He operated for suppurative tonsillitis. The patient was properly prepared for operation; no blood was swallowed but vomiting took place from the anæsthetic and two tablespoonfuls of pus were brought up. This must have been swallowed during the night, roughly a period of 12 hours.

Dr. HERBERT TILLEY (London) quoted two cases of severe mental depression in which the symptoms completely disappeared after the treatment of antral suppuration.

Mr. J. G. TURNER (London) approached the question from a clinical point of view. He remarked on the extreme frequency of the condition and said that early stages were often overlooked. It was not an easy thing to treat such a condition and no mouth could be considered healthy until every pocket was free from suppuration. With regard to the question of immunity to the results of oral sepsis he thought that the absorption of small doses produced an acquired immunity but that was not health; such a condition could not last and sooner or later a complete breakdown occurred. A case lately under his care illustrated this point. With regard to the local immunity the granulation tissue in the sockets resisted the invasion of the organisms but if that tissue were injured infection followed. Clinical experience, he thought, pointed that way.

Mr. NORMAN BENNETT (London) spoke of a case in which a girl, aged 16 years, had been the subject of fainting fits. The attacks varied in frequency, at times several occurring in a day; they took the form of unconsciousness, with rigidity, groaning, and movements of the limbs. The septic condition of her mouth was treated and the fainting attacks ceased. The cases pointed, he thought, to an obscure general condition arising from the local mouth lesion.

Dr. GOODALL (London), Professor J. ARKOVY (Budapest), Mr. E. LLOYD-WILLIAMS (London), and Mr. W. HERN (London) also took part in the discussion.

THURSDAY, JULY 28TH.

Mr. J. ACKLAND read for Mr. W. H. BATTLE (London) a short account of

A Case of Melanotic Alveolar Sarcoma

of the anterior part of the maxilla in a child, three months of age. The tumour was removed in July, 1902, and now (July, 1904) the patient was quite free from recurrence.

Professor ARKVOY read a paper on

Caries Alveolaris Specifica or Pyorrhœa Alveolaris.

He referred to one special form. The alveolar condition was accompanied by abscesses which were cavities larger than the usual circumscribed abscess and contained often no pus. Fever might be present, lasting for a week if pus was present, though if present it was only in small quantities. The pulp of the teeth might be alive but was inflamed. The pyorrhœic process was at times so acute that all the teeth were loosened in a few weeks. There were also "uratic blisters" on the gums but these were not products of acute sepsis but probably gouty.

Mr. TURNER had seen the large abscesses in their chronic state but not the complexity of symptoms described by Professor Arkövy.

Mr. P. SYDNEY SPOKES (London) asked if the uratic blisters were not analogous to chalk-stones.

Mr. GOADBY knew the abscesses and described one which led to thrombosis of the facial vein and death. He thought the acute [illegible] was due to superinfection and symbiosis inducing [illegible] virulence.

Mr. W. [illegible] (London) thought the pain a constitutional dist[illegible] and unilateral distribution pointed to the uratic blisters being herpetic.

Mr. SPOKES read a paper on

The Care of Children's Mouths.

The examination of 10,000 school children of an average age of 12 years showed that only 15 per cent. had sound teeth and it was safe to say that decay of the teeth occurred to a larger extent than any other departure from the normal physiological standard. It was difficult not to believe that the condition met with in a systematic examination of the mouths of such children, as yet untreated, must have some prejudicial effect, and that it resulted in a lower nutrition than might be otherwise attained if the teeth were sound and mastication was thoroughly performed. A large proportion of such children were not able to deal with food efficiently, either from actual loss of masticating surfaces or because of tenderness or actual pain upon pressure. Again, when a child was attacked by some infective or constitutional disease was it not reasonable to suppose that the resistance of the organism might be greater had nutrition, aided by thorough mastication and insalivation, been maintained at its highest possible level? Further, there appeared reason to think that the mouth itself with broken-down teeth and septic pulp chambers might be the spot in which the infective material was cultivated, and that whereas in a healthy mouth pathogenic organisms might meet with a peaceful end, in the diseased mouth propagation was provided for and a larger dose was prepared for entrance to the body by the lungs, stomach, or lymphatics. At the least they might say that any departure from the normal was a matter of significance and that septic [illegible] ing cause of other diseases. [illegible] times a year with dental [illegible] life. If commencing decay was found it should be promptly dealt with by "stopping" and at such a stage this could be done with a minimum amount of trouble to both patient and operator. The teeth of the deciduous series should be preserved in this way until their successors were ready to take their place. But when, on examination, it was found that deciduous teeth had been allowed to decay so far as to become necrosed and septic they should be removed in order to secure a healthy mouth.

Mr. TURNER read a paper on

The Influence of the Growth of Bone on the Positions of the Teeth.

Too little attention was paid to the influence of the growth of bone in producing the normal arrangement of the dental arch. The six front teeth, both permanent and deciduous, though developed in a definite but crowded arrangement, eventually took up positions in a regular arch. The three permanent molars developed one after the other—the upper with their occluding surfaces facing backwards, the lower forwards and upwards; all eventually assumed vertical positions in the dental arch. The anterior deciduous teeth, at first in apposition, by about the end of the fifth year are separated by as much as one-eighth of an inch. All these movements were due to growth of bone which carried the teeth with it. When, as in naso-pharyngeal obstruction with adenoids, growth was arrested or delayed, the teeth also failed to get moved into their normal positions. Models illustrating these cases showed that in children the normal spacing of the front teeth failed; that the permanent molars were erupted in too narrow an arch, while if the obstruction were removed or "outgrown" the molar next erupted came in a wider arch, due to increased lateral growth of the maxilla, but the parts in front were left in their deformed state, since the time for their growth had passed; and that "open bite" was in some cases due to deficient vertical growth of the anterior part of the maxilla. The front teeth were often found fixed in a more or less fœtal position, recalling the crowded position of development. All these deformities were easily explained as due to arrested or delayed growth of bone. Examples of unrestrained growth of bone were seen in the way in which a second maxillary molar moved forward after extraction of a first permanent molar and a second mandibular præmolar *backward* after extraction of the lower first molar. Deformities of the dental arch were valuable indications of deficient growth of the maxilla and adenoids might often be suspected, especially when in children the deciduous front teeth failed to "space" themselves.

In the discussion which followed Mr. H. BALDWIN (London), Dr. J. SIM WALLACE (London), and Mr. W. A. MAGGS took part.

Dr. WALLACE read a paper on

The Teeth in Relation to Physical Degeneration.

Attention was given to a consideration of the harmful effects of diseased states of the teeth on general physical development, but still greater stress was laid on the present-day craze for feeding children with highly refined assimilable and soft foods. Dr. Wallace enforced his arguments by referring to the fact that, notwithstanding general amelioration on account of improved sanitation, &c., these very [illegible] ritious pap system of [illegible]. Under this category [illegible] stion, constipation, and consequent fermentation of food in the intestine often leading to fatal diarrhœa, appendicitis, neurasthenia, adenoids, anæmia, and rickets. He insisted on the fact that the alimentary canal had through countless generations become adapted for the extraction of nutriment from relatively innutritious matter, while the present-day belief "would appear to be to take in nutriment at the mouth and by the aid of pills render the intestine capable of extracting excrement from it." He considered that food should be of such consistency as to stimulate mastication and should contain sufficient innutritious matter to cause regular daily evacuation of the bowel. For this purpose he advocated the products of the kitchen garden and orchard rather than the products of pastry cooks, confectioners, and proprietary food manufacturers.

THE NATURE AND ETIOLOGY OF CANCER.

At the conversazione given by the Vice-Chancellor and the members of the University two interesting demonstrations with regard to the nature and etiology of cancer were given, the first by Mr. C. E. WALKER and the second by Dr. W. FORD ROBERTSON and Mr. H. WADE. Both demonstrations were illustrated by lantern slides.

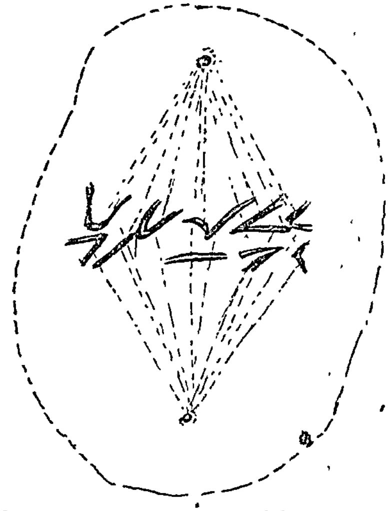
(1) MALIGNANT GROWTHS IN MAN AND NORMAL REPRODUCTIVE TISSUES.

Mr. WALKER dealt with the researches carried out by himself in conjunction with Professor J. B. Farmer and Mr. J. E. S. Moore, the results of which were communicated to the Royal Society on Dec. 10th, 1903, and the main points of which were published in THE LANCET of Dec. 26th, 1903, p. 1830. Mr. Walker recapitulated these points as follows:—

The Methods of Division of Somatic and of Reproductive Tissue Cells.

The value of the deductions to be made depended to a great extent upon the differences between the manner in which the somatic cells—the cells forming the ordinary tissues of the body—and those which were destined to form reproductive tissue divided. To emphasise the similarity existing between malignant tissue and the normal tissues of the sexual reproductive glands it was proposed to introduce the term "gametoid" to express the former and "gametogenic" the latter. When the egg of an animal or plant segmented so as to give rise to an organism the nuclei of all the cells were found, when dividing, to contain a definite number of rod-like bodies known as chromosomes, this number remaining constant throughout subsequent divisions. Besides remaining constant in number, however, the

FIG. 1.



[illegible]

chromosomes passed through a very definite series of evolutionary changes. At first the material out of which the chromosomes originated appeared as granules of stainable substance (chromatin). Then, after certain characteristic stages, this substance took the form of chromosomes, of which the number proper to each animal or plant was constant. During the process of division each of these chromosomes split longitudinally into two daughter chromosomes which at that period were arranged in a very definite manner upon the spindle, frequently appearing as V's with the apices towards its axis (Fig. 1). The daughter nuclei were formed by the distribution to either pole of the spindle of the respective halves of each original chromosome. The nuclei thus formed might now enter upon a period of rest. Whenever new *somatic* cells were formed in the body the nuclei passed through identically similar phases. But in every individual there were certain cells which eventually gave rise to the gametogenic elements, not to the specialised somatic tissues. Such cells, whether they appeared early in embryonic life, or later during the life of the individual, always presented very marked difference in their mode of division and in their subsequent history. These differences first became apparent as the cell commenced its preparation for division. Those cells which were about to produce the gametogenic elements presented a highly peculiar appearance, and at a definite stage in the multiplication passed through a cycle of changes wholly different from that passed through by the cells of the surrounding tissue and also from the changes occurring in those cells from which they themselves had sprung.

To the particular form of division (mitosis) associated with this metamorphosis the term "heterotype" had been applied and it was a characteristic and interpolated stage in the reproductive cycle of all sexually propagating animals and plants. Cells from which the heterotypically dividing elements would finally emerge could often be distinguished from those which would produce somatic tissues. In the testis of a mammal or in the sporogenous tissue of a stamen the existence of these cells might be recognised with ease and certainty. They continued to multiply and though differing from the adjacent cells in many respects resembled them in their mode of division until they passed severally into that peculiar state of growth that ushered in the heterotype division. The essential features in which this heterotype mitosis differed from the somatic mitosis (that of the cells forming the soma or body of the plant or animal), as well as from those in the cell generations of the reproductive tissues that had preceded it, were as follows: 1. A period of rest and growth. 2. The chromosomes when they were formed from the resting nucleus were present in only half the number of those occurring in the rest of the dividing nuclei of the organism. 3. The forms exhibited by the chromosomes were strikingly different from those of other nuclei. They presented figures resembling loops, rings, aggregations of four beads, and so on. 4. They were arranged longitudinally upon the spindle. Their division on the spindle was apparently always transverse aad not longitudinal, for even in examples where the separation might be interpreted as longitudinal fission the process as actually passed through differed markedly from the ordinary longitudinal fission exhibited by the chromosomes of every other mitosis. It would thus be seen that the heterotype mitosis was an easily recognisable phase in the history of the development of the gametogenic cells.

It was a fact of the highest inportance that when once heterotype division had supervened all the descendants of that cell in normal cases retained the reduced number of chromosomes, the cycle closing with the formation of the definite sexual cells. It was on the fusion of two of these cells (ovum and spermatozoon) that the double number of chromosomes was restored, and this number was characteristic of the fertilised egg and of all the cells to which it gave rise until the heterotype mitosis again supervened in the gametogenic tissues.

The Resemblances between the Growth of Malignant Tissue Cells in Man and those of Reproductive Tissue.

A systematic investigation of the cytological features of malignant growths in man had revealed the existence of a surprising degree of similarity between the phases that characteristically recurred in these growths and the transformations from somatic into reproductive cells as just described. Thus in a typical example of epithelioma they found that in the early stages of proliferation of the Malpighian layer the cells of the invading tissue at first passed through a cycle of somatic divisions, exactly as occurred during the early stages of the formation of normal gametogenic tissue. As cell multiplication proceeded, however, a change passed over the cells themselves. The protoplasmic continuity, to which their "prickly" character was due, became obliterated and the cells assumed that appearance of indifferent germ tissue so well known as a feature of the elements of which malignant growths were largely made up. Besides this a varying number of cells were observed, often situated in an ill-defined zone behind the growing edge of the advancing neoplasm, which had attained somewhat large dimensions. Each contained a nucleus which had grown to a considerable size. In those which had entered upon a prophase of division it was recognised that the chromosomes instead of appearing as delicate thin rods or V's split longitudinally, presented the appearance of short, thickened loops or rings, closely resembling the later prophase stages of the heterotype mitosis in the normal gametogenic tissues. Still more significant was the fact that in these cells the number of the chromosomes was obviously less than in the normal somatic cells or the surrounding tissues. In many cases it was determined that the numbers were approximately halved; and furthermore, it was clear that the loops and rings characteristic of this stage of the cellular development of malignant growths were arranged lengthways on the spindle and so were ultimately divided transversely, exactly as in the corresponding heterotype mitosis of the reproductive elements. Subsequent divisions appeared to resemble the somatic form but retained the reduced number of chromosomes (homotype division). The cells were in no *sense embryonic in character*, though they had so frequently been described as such in the past. Embryonic cells had the potentiality of the full normal number of chromosomes and exhibited them when in process of division. It was thus pointed out that in a most important respect the various malignant tumours presented certain common features, and that these features were similar to those observed in the normal process of differentiation of reproductive cells. They felt themselves justified in deliberately correlating the appearance of these malignant growths with the result of a stimulus which had changed the course of somatic cell development into that characteristic of gametogenic tissue. They looked upon this transformation as representing the immediate cause of the malignancy of the

FIG. 2.

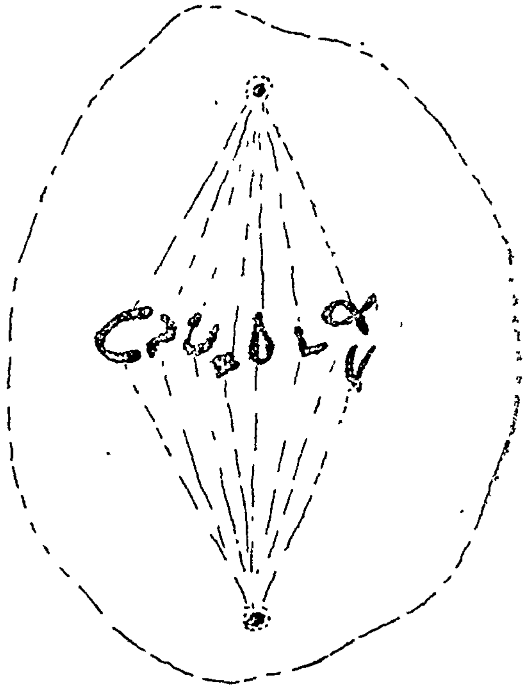


Diagram of a heterotypical division, showing the characteristic rings and loops which split transversely to form the daughter elements As in the former figure the full number of chromosomes is not shown.

growths in which they were found. The remote causes *must be sought amongst those various physiological stimuli*—occasioned, e.g., by continual irritation—*known to favour* their development. They also considered that malignant growths were definitely distinguishable from benign tumours, for in the latter they had not succeeded in discovering anything resembling the very characteristic nuclear changes described above.

Dr. W. FORD ROBERTSON and Mr. HENRY WADE showed *microscopical preparations illustrating some of* the results of an investigation into the Etiology of Carcinoma, carried out chiefly with the aid of metallic histological methods.

(2) CANCER AND PLASMODIOPHORÆ.

History and Technology.

Dr. Robertson said that they had undertaken the investigation with the object of testing the hypothesis, so strongly advocated by Roswel Park, Gaylord, and others in America, that carcinomatous tumours were due to the presence of an organism of the same nature as the plasmodiophora brassicæ, which was known to be the cause of certain tumours occurring especially in cruciferous plants. These vegetable tumours were commonly referred to as "finger and toe disease," "club-root," or "kohlhernie." Their own observations seemed to prove that minute plasmodiophoræ were indeed present in carcinomatous tumours and that they could be grown from such tumours through a definite *stage in their life cycle. The plasmodiophora brassicæ* had been first described by Woronin in 1878. The account of its developmental cycle which he had then given remained, with *unimportant modifications*, the one that was still accepted as accurate. According to this description the organism in the spore stage fell into the ground with the *decay of the plant which formed its host* and lay dormant until the spring or early summer. From each spore there then developed an amœboid swarm cell which might *find its* way *along* the root hairs of a *young* plant into certain cells. Here it multiplied rapidly and at the same time induced excessive proliferation of the cells in which it [illegible] l of the amœboid cells united to [illegible] nd within this spores were de[illegible] were extremely difficult to stain [illegible] ry histological methods were practically useless for the purpose of revealing their presence. They had found that certain metallic processes, more particularly the [illegible] *ning with* gold (see *Re*[illegible] ly, 1904), were speciall[illegible] organism in the vegetable tumours.

The Life Cycle of the Parasite.

With the aid chiefly of these methods they had been able to [illegible] the *developmental* cy[illegible] l apparently passed un[illegible] ative stage which oc[illegible] the spore and prese[illegible] place between the sp[illegible] *everal phases.* The recognition of the existence of these two stages was of the utmost importance for the investigation they had undertaken because the first was evidently the one in which the organism chiefly stimulated the cells of the host to abnormal proliferation, whilst the second was the only one through which the [illegible] be grown in culture media. Ha[illegible] referred to been aware of the [illegible] would probably by this time have established the accuracy of their hypothesis. A pre-spore, spore, pre-amœboid, amœboid or swarm cell, and a *plasmodial* stage were recognised. In the first phase of the pre-spore stage the organism in the silver-gold preparations had a prominent nucleus and a faintly coloured delicate cell-body, *limited* in optical section by a thin line. In the second phase the organism had increased slightly in size and assumed a round form; the nucleus was less prominent. This phase of the *pre-spore* stage passed gradually into the spore which appeared in the silver-gold preparations as a hyaline sphere, frequently presenting a central crimson spot. This was evidently the form in which the organism lay dormant in the ground during the winter. The immediately succeeding pre-amœboid phases had been observed in a vegetable tumour that had been incubated. The hyaline spore became granular and a central nuclear body made its appearance. This granular spore, as seen lying in the cell of the host, was *surrounded at some little distance by a delicate capsule* formed from the *surrounding tissues.* The granules gradually increased in size until they took the form of a number of *bodies resembling micrococci or short bacilli.* These further enlarged into spherical bodies with a sharply defined border. They proliferated rapidly and still further *increased in size. The development could not be traced* beyond this point in the incubated vegetable tumour, but the observations of Woronin, Gaylord, and others justified the *conclusion that these spherical bodies* ultimately became the amœboid swarm cells.

Similar Bodies found in Carcinoma.

In carcinomata they had been able to observe bodies which, in their form and in their reaction to the metallic processes employed, were identical with the plasmodiophora brassicæ in its pre-spore, spore, pre-amœboid, and amœboid stages. They differed from the plasmodiophora brassicæ only in being from one-tenth to one-twentieth of the size. They also appeared le[illegible] could be accounted for by the [illegible] tion of the animal cells. Th[illegible] pre-spore forms occurred chiefly in the protoplasm of the *epithelial cells. The spores were mainly, but not exclusively,* intra-nuclear. In their hyaline phase they could not be distinguished from a nucleolus, but when the granular phase was reached they could be shown to have characters identical with those of the granular spore of the plasmodiophora *brassicæ. The capsule derived from the cell in which the* parasite lay was, however, comparatively very thick and tended to obscure the body lying within it. Appearances which *seemed accurately to represent the escape of the* swollen and granular germinating spores from the nuclei and their subsequent development into large granules and *spherical bodies with sharply defined border could be traced* with little difficulty. Bodies having the same appearance as the amœbæ of the plasmodiophora brassicæ figured by Woronin could also be observed. They had succeeded in growing from carcinomata an organism having the characters of a plasmodiophora in its immediately post-spore phases. They could not speak definitely regarding the presence in carcinomata of bodies representing a plas[illegible] et had an opportunity [illegible] with the aid of their [illegible] g the known plasmodia with certain forms in carcinomata which were probably of a *similar nature.*

Conclusions.

Summarising their results and conclusions Dr. Robertson said that they had been able to recognise in carcinomatous tumours bodies which in their form and in their reaction to the platinum and silver-gold methods were identical with the plasmodiophora brassicæ, but from one-tenth to one-twentieth of the size. They had succeeded in growing from three carcinomata an organism which accurately represented the post-spore or pre-amœboid stage of a plasmodiophora. If plasmodiophoræ were present in carcinomatous tumours it was hardly open to doubt that they had the same relation to the morbid growth as the plasmodiophora brassicæ had to club-root—that was to say, *that they were the determining* etiological factor.

THE ANNUAL EXHIBITION.

V.—MINERAL WATERS, BEVERAGES, ETC.

There was a fair representation of mineral waters and beverages, and amongst them a few novelties. Perrier water, for example, though well known on the continent, has *only been recently introduced into this country. The water* is drawn from a spring situated in the Midi of France. *The* spring has been known from classical times. Perrier is an alkaline *water containing* chiefly lime salts with small quantities of sodium salts. The total saline residue is, however, small, amounting to less than 30 grains per gallon. The water has a very agreeable taste and is charged with its own natural carbonic acid gas. Messrs. Idris and Co., Limited, of Camden Town, London, N.W., exhibited a number of interesting aerated waters, including artifici[illegible] "distilidris," a distilled water [illegible] as carbonic acid gas; and "[illegible] ter containing certain salines [illegible] should be noted that the syphons are constructed with solid earthenware spouts so that the water does not come into contact at any point with metallic fittings. Amongst the largest displays of natural mineral waters was that of the Apollinaris Company, Limited, of 4, Stratford-place, Oxford-street, London, W. A feature of the display was Apollinaris water contained in large stone jugs holding nearly a quart of water. The exhibit included Johannis lithia water and Johannis potash water and Apenta, the magnesian bitter water from Buda-Pesth. Messrs. Allsopps, of Burton-on-Trent, exhibited specimens of their lager beer which is brewed on the continental system. It is a very palatable beer, whilst containing only a small proportion of alcohol. Messrs. Reinheimer and Co., of Surbiton, Surrey, exhibited examples of nektar wines which represent, in fact, perfectly clear preserved grape juice. The use of preservatives is avoided, pasteurisation sufficing. We have already given analytical details of these excellent preparations. A large variety of aerated waters was shown by Camwal, Limited, of 112, Pembroke-street, Caledonian-road, London, N. These included medicated waters, such as soda, potash, and lithia, piperazine and lysidine, and a natural table water from Harrogate sparkling with carbonic acid gas. Amongst natural mineral purgative waters was the Arabella water exhibited by Arabella, Limited, 2A, Hay-hill, Berkeley-square, London, W., which while containing a satisfactory proportion of magnesium and sodium sulphates is not so nauseous to the taste as might be expected; and Friedrichshall, a less powerful water, but containing a very suitable proportion not only of the sulphates of magnesium and sodium but of the chlorides also (C. Oppel and Co., 10 and 12, Milton-street, London, E.C.) A few English spas were represented, notably Buxton, Harrogate, and Leamington. During the meeting a party was organised to visit the latter spa and to inspect the treatment and arrangements made for patients at that enterprising place. Vichy and Carlsbad waters were well represented at the stall of Messrs. Ingram and Royle, Limited, of 26, Upper Thames-street, London.

VI.—PUBLICATIONS.

Publishers continue to find the annual exhibition a means of introducing new publications to the notice of the profession. Amongst those who had stalls this year were Messrs. W. B. Saunders and Co., of 9, Henrietta-street, London, W.C.; J. B. Lippincott Company, of 5, Henrietta-street; John Wright and Co., of Bristol; Mr. H. K. Lewis, of 136, Gower-street, London, W.C.; Messrs. Cassell and Co., of La Belle Sauvage-yard, London, E.C.; Messrs. Macmillan and Co., Limited, St. Martin's-street, London, W.C.; and Messrs. John Bale, Sons, and Danielsson, Limited, of Great Titchfield-street, Oxford-street, London, W. There also may be mentioned the exhibits of Messrs. W. and A. K. Johnson consisting of a series of 12 diagrams on hygiene intended to illustrate a course of popular health lectures.

VII.—MISCELLANEOUS.

Amongst the miscellaneous exhibits may be mentioned the specialities for weak feet, and natural shape boots, exhibited by Messrs T. Holland and Son, of 40, South Audley-street, London, S.W.; the series of sanitary wood wool preparations by the company of that name, of 26, Thavies Inn, Holborn-circus, London, E.C.; the special wire mattresses for hospital use, for lunatic asylums, &c., by the Longford Wire Company, Limited, Warrington; the aertex cellular clothing of the Cellular Clothing Company, Limited, 72 and 73, Fore-street, London, E.C.; the anatomical boots and invalid boots, by Mr. N. Bletchley, of 89, Northgate-street, Gloucester; the system of keeping medical accounts, by the Trading and Manufacturing Company, Limited, of Temple Bar House, Fleet-street, London, E.C.; the Lawson-Tait spring bedsteads, by Messrs. George Gale and Sons, Limited, of Dominion Works, Birmingham; and lastly an exhibit by Messrs. S. Goff and Co., of 17 and 18, King-street, Covent Garden, in which were included sets of harness, a doctor's gig, and stable sundries for medical men.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. James H. Dunn of Minneapolis, where he was professor of surgery at the College of Medicine and Surgery. His death occurred a St. Louis, where he had gone to attend a meeting of the American Surgical Association.—Dr. Friedrich Heisrath of Königsberg, whose work on trachoma is well known.—Dr. C. A. Gayet, professor of clinical ophthalmology in the University of Lyons.

ANNUAL REPORT OF THE METROPOLITAN ASYLUMS BOARD.

THE annual report of the Metropolitan Asylums Board for the year 1903 was submitted to the managers by their chairman, Mr. Augustus C. Scovell, on July 23rd and has now been issued to the public. The reports of the various committees by which the work of the Board is transacted are contained in a volume of 320 pages, preceded by a list of members of the Board showing the committees upon which they serve and, in the case of those elected by boards of guardians, the unions which they represent. Then follows the report of the Board itself, a brief document signed by the chairman and the secretary, with a list appended of the institutions under the control of the Board or in course of erection by it. A useful index concludes the volume. The various committees which make reports are the general purposes committee, the finance committee, the works committee, the contract committee, the children's committee, the training ship *Exmouth* committee, the asylums committee, the ambulance committee, the hospitals committee, and the statistical committee. To the reports of the committees are added, by way of appendices, reports and statistical tables referring to particular subjects, with maps and charts showing the incidence, fluctuations, and provision for the treatment of infectious disease in London. A medical supplement occupies nearly 50 pages.

During the year 21,925 patients passed through the Board's fever hospitals and 359 through the small-pox hospitals, the principal feature of 1903 being the greatly diminished prevalence of infectious disease as compared with preceding seasons. The number of cases of disease admissible to the Board's hospitals and notified as such were in 1901, 35,311; 1902, 40,046; and 1903, 23,087 (p. 162). For this welcome falling off the abatement of the recent small-pox epidemic was largely responsible, the notifications of this disease having numbered in 1901, 1700; 1902, 7796; and 1903, 416; but a lesser occurrence of other diseases is also conspicuous, the figures for scarlet fever in the three years before named standing at 18,381, 18,252, and 12,531 respectively, the figures for diphtheria in the same years being 11,968, 10,538, and 7582, and for enteric fever 3194, 3407, and 2339. In typhus fever alone there was an increase to 22, the highest number since 1893, but these figures are so small that they do not affect the total, and typhus fever during the years recorded by the Board has fluctuated between 35 cases in 1890, the first year tabulated, and four, which was the total in 1897 and 1902.

With regard to diphtheria an encouraging feature of even more importance than the smaller number of cases is the continued decrease in the rate of mortality since the introduction of the antitoxic serum. The mortality rate among the cases of this disease treated in the Board's hospitals was 40·74 per cent. in 1889, varying between this and 30 per cent. up to the introduction of the serum treatment in 1895. It then fell to 22·85 per cent. The serum is now used at all the hospitals for every case judged sufficiently severe to require it and not too far advanced for it to be useless, with the result that the mortality in all cases of diphtheria during 1903 was 9·69 per cent. It must be remembered that many cases are brought under treatment too late and the figures recorded at one of the hospitals showing the day of the disease on which the antitoxic serum was first used speak even more strongly than those already quoted. At the Brook Hospital between 1897 and 1903 187 cases have been treated with antitoxic serum on the first day of the disease without a single death occurring, and 1186 on the second day with 5·4 and 5 deaths per cent. in the first two years of the series respectively, since which period the rate has been about 4 per cent. In cases treated after the second day the mortality is much higher, ranging up to, and sometimes exceeding, 20 per cent. These figures relating to the success of the antitoxic serum treatment in diphtheria should be studied by the public. The writers in a section of the press who are never tired of attempting to discredit any new treatment which they can class with vaccination as "introducing poison into the human frame," and who are abusive of all discovery if they suspect that experiments upon animals have assisted in its development, have misled the public about the value of antitoxic serum. The public should remember that the figures now cited are incorporated in the report of a body of unprejudiced business men elected for the purpose of seeing that the public treatment of infectious disease in the metropolis is efficiently carried out.

In the report dealing with the small-pox hospitals in 1903 an experiment is recorded (p 234) which was made in accordance with the claim of Dr Finsen that the exclusion of all but red light from the wards in which small-pox patients were being treated had the effect of preventing the suppuration of the vesicles and pitting, of abolishing the suppurative fever, and of lowering the mortality No such effects were observed in a small ward of the Long Reach Hospital, from which all but red light was excluded by means similar to those used in constructing a developing-room for photographic purposes. In addition to the absence of any curative effect the gloom was believed to have a deleterious effect upon the general condition of the patients [1]

The medical supplement to the report consists mainly of tables. Three of these relate to the incidence of complications of scarlet fever, diphtheria, and enteric fever, and one gives details of 378 instances (2 19 per cent. of the whole number of infectious cases) in which two or more infectious diseases were co-existent at the time of the patient's admission to the hospitals. With the tables relating to diphtheria are particulars of the fatal cases in which antitoxin was not administered (p. 292) Of these (11 in all) five were moribund on admission and six were cases in which no benefit could have been derived from antitoxin. Two notes conclude the medical report contributed by Dr. H W L Barlow, assistant medical officer at the Park Hospital, upon Purin Compounds in Nephritis and on Vincent's Tonsillitis.

Reference should be made to the report of the ambulance committee (p 148) as one of general interest to medical men in London and to their patients, particularly to those of small means. The committee declares itself aware of the great need felt in London for an efficient public ambulance service for the conveyance of patients suffering from non-infectious diseases as well as for infectious, but not notifiable, cases It states that it had communicated with the local authorities and with the hospitals and had found a considerable majority of opinion in favour of steps being taken for the provision of such a service. It therefore advised the general purposes committee in favour of the proposal that the Metropolitan Asylums Board should be the public body responsible in the matter, and since then the managers of the Board have applied to the Local Government Board *for the authority necessary for them in order to* promote the undertaking No reply on the subject has yet been received The cost of the proposed service would be covered, the ambulance committee states, by a charge of 7*s* 6*d* for each single journey by a one-horse ambulance within the metropolitan area

In the report of the finance committee (p 6) a paragraph of some importance to medical men about to take service under the Metropolitan Asylums Board appears and is as follows —

> Several recommendations from the central committee for the addition of a number of years to the actual period of service of officers under their control have been remitted to and have been carefully considered by us but in no case were we able to find any special circumstances or peculiar professional qualifications which would have justified us in recommending the managers to grant any addition.

The amount which such additions to pensions as those referred to would add to the expenditure of a Board, the yearly outgoings of which exceed £1 100,000, would be insignificant compared with the effect in securing willing and efficient service. But judicious liberality to their medical officers does not seem to form a part of the policy of the Board Take, for example, the case of Dr W. Gayton, whose retirement after 34 years service under the Board is just announced In the small-pox epidemic of 1870 Dr. Gayton treated 12,000 patients without medical assistance In the small-pox epidemic of 1891 he prepared and opened the camp hospital at Darenth at a few days' notice and subsequently opened the hospital ships in addition to his work at the Eastern Hospital. He conducted the North-Western Hospital so that it proved in working the most economical of all. He has frequently been thanked and commended for his services in the course of a long and arduous career spent in the service of the Board. Moreover, there is a feature in his superannuation which merits observation. The *Poor-law Superannuation Act*, 1896, *provides* that "when an officer or servant has attained the age of 65 years and the guardians or managers are of opinion that it would be expedient in the interests of the public service that he should cease to hold his office or employment, it shall be competent for them to require him to retire upon payment to him of his superannuation allowance to which he may be entitled by the Act" The Board does not appear to have retired Dr Gayton under this section. It has made an order of its own under which he has fallen automatically. It runs as follows. "In the opinion of the managers it is expedient in the interests of the public service that every officer or servant in the employ of the managers shall cease to hold his office or employment so soon as he has attained the age of 65 years, unless the managers shall pass a special resolution to the effect that his retirement will cause inconvenience to the public service, in which case he shall [illegible] so on at the termination of [illegible]" This is very different from [illegible] ch case by the Board before the officer retires, and a substantive finding that the individual officer is unfit, a preliminary which the Act enjoins It would be interesting if it could be tested in a court of law whether officers retired under the order of the Board have been legally removed or not, or whether *the resolution being ultra vires they are entitled to their full* pay until proper steps have been taken by the Board in order to deprive them of it In any case the question of possible future generous treatment or the reverse should be carefully considered by medical men before engaging to serve the Board If ever an officer merited special consideration from a public department that officer was Dr Gayton But his deserts have not saved him.

New Inventions.

A NEW REGULATING INHALER.

A FORM of inhaler, a portable apparatus intended for home use *by patients in the treatment of diseases of the lungs* and air passages, has been devised by Dr Anton Bulling of Reichenhall under the name of the Regulating Inhaler or Thermo-Variator It is made principally of highly *glazed white porcelain and when standing on a table* put together ready for use measures about 22 inches long and 11 inches high The part shown on the right hand of the illustration contains a sheet metal boiler heated by a spirit lamp The fluid to be inhaled is placed in a shallow open pan from which it is drawn up by the current of steam and converted into very fine spray at the nozzle, the jet of spray being directed horizontally through the wide porcelain tube towards the mouth of the patient. At its large end this tube has a number of broad apertures for the admission of air, capable of exact regulation by a sliding external metallic tube The temperature of the mixture of spray and air is shown on a thermometer which projects externally Two outlets for the spray are supplied, one a mouthpiece having a single orifice and the other a double orifice for inhalation by the nose. The material and construction of the inhaler enable it easily to be cleaned and rendered aseptic It may, if required, be used for medicating, disinfecting, or moistening the atmosphere of a room as well as for direct inhalation. The representatives of the German manufacturers for the *United Kingdom* are Messrs. F Krasa and Co. of Wood-street-square London, E.C

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[1] Vide THE LANCET, July 30th, 1904, p 287.

THE LANCET.

LONDON: SATURDAY, AUGUST 13, 1904.

Municipalities and their Duties.

WE have lately had to call attention to the good fortune of the borough of Wigan, as displayed by its possession of an organised body of citizens sufficiently energetic and sufficiently enlightened to take a proper interest in the doings of the local authorities, to stimulate them when torpid, to restrain them when mischievously active, and generally to bring their deeds and defaults prominently to the notice of the ratepayers by whom they are from time to time elected. We are not yet able to extend the same congratulations to the ratepayers of Liverpool; but we have read with great interest and pleasure a publication which seems to render it probable that a similar organisation will before long be formed there. The publication in question is entitled "Municipal Shortcomings," and it is a reprint of a series of 25 articles contributed to the *Liverpool Journal of Commerce* by Mr. T. MYDDELTON SHALLCROSS. The author took as his original text the fact that the death-rate of Liverpool is unduly high; and he argued generally that, as a high death-rate is usually or always traceable to obvious insanitary conditions, and as the municipal authorities are the persons by whom insanitary conditions should be rectified, the high death-rate must, *a priori*, be directly traceable to their sins of omission or commission. He further proceeded to trace the causes of these sins to the circumstance that the persons guilty of them are not in the first instance selected with any reference to their fitness for the work which it becomes their duty to accomplish, but solely from what are called "political" considerations, as well as to the additional circumstance that the chairmen of committees and other officers do not retain their positions for a sufficient time to render them conversant with the details which it should be their endeavour to master or with the laws which it is their business to carry into effect. From the standpoint thus indicated he pushes his inquiries into nearly every one of the chief branches of urban local government and describes in telling language the very little that is done and the great deal that is left undone. The chief heads of the resulting indictment may be summed up under neglect of scientific knowledge, neglect of the sources of diffusion of infectious diseases, neglect of cleanliness, inefficient control of adulteration and of food and milk supply, neglect of the supervision of kitchens, and neglect of the supervision of manufactures, especially of the manufacture of clothing. He further dwells upon the general ignorance of cooking and upon the neglect of cooking by the community, but these are surely matters for which the local authorities are at present scarcely more responsible than the citizens generally. Now that the powers of the former extend to the control of education they may reasonably be expected to regard good cooking as a consequence of instruction rather than as a gift of nature.

Mr. SHALLCROSS enters into detail with regard to nearly all the counts of his long and varied indictment, but inasmuch as details of this kind will seldom be the same in different places it is not necessary to occupy space in describing them. His general principle is, we think, indisputable, although there are probably many persons, and among them many borough councillors and such like people, who will regard this principle much as LOUIS XIV. regarded the opinion of his grandson that subjects were not created solely for the benefit of kings. Mr. SHALLCROSS holds that it is the duty of local authorities to exert to the full the whole of the powers conferred upon them by law for the protection of the community against disease and other preventable evils and that it is equally their duty, when experience has proved these powers to be in any particular inadequate, to seek for their increase in the proper directions and to the necessary extent. As a corollary to this opinion he holds also, it need hardly be said, that it is the duty of ratepayers to give their votes to men who will accept and endeavour faithfully to discharge the responsibilities of their position, and who will not be content with "representing" the Submerged Ward in the interests of so-called Liberalism or Unionism, but will set to work at cleaning its thoroughfares, at abolishing its nuisances, and at purifying its slums. The complete justice of his criticism may be illustrated by an arrangement of which we were cognisant, and which was made in an important manufacturing town in the Midlands in the course of the last century. Party politics ran high in the place and the "Liberals" had a small but decided majority. It was so small that seats in the town council were frequently disputed and much expense was incurred in contested ward elections. The Liberals offered a compromise. If the Conservatives would not seek to enter the town council they should be permitted to reign undisturbed in the board of guardians. The offer was accepted with an understanding that the proceedings of the latter body should be fully reported in the local papers. The town councillors were thenceforward all Liberals, and their official duties were practically limited to the management of little jobs for the benefit of members of their "party." The guardians were all Conservatives, and at every meeting of the board they delivered their opinions about things in general, and the conduct of the Government in particular, to a bevy of pressmen, by whom their words of wisdom were duly communicated to the rest of the inhabitants. The speeches having been made, the speakers went away in a body and left the unimportant business of the relief of the poor to be settled by the clerk and the vice-chairman.

All diligent students of the "Pickwick Papers" have been made aware that "the word politics comprises in itself a difficult study of no inconsiderable magnitude," but this view of the case has failed to commend itself to many municipal councillors who have often fallen into the error of regarding themselves as being primarily concerned with the affairs of the kingdom and only secondarily with those of the borough. Their error has been confirmed by the fact that the leaders of political parties have persistently regarded "parochial" as a term of contempt, and have as persistently thwarted the efforts of those who have aimed at sanitary improvement, lest its attainment should give umbrage to many of their followers The great health officer who has recently closed his career was occupied during the last years of his official life in vainly pressing the need for reform upon the attention of the Government and of Parliament, and there is, perhaps, some reason to hope that the good seed sown by him is now beginning to bear fruit The cowardice of professional politicians is generally at least as conspicuous as their ignorance of all scientific questions, and it is probably hopeless to expect any effective aid from ministerial quarters But the most exalted personage in the realm has struck a keynote by his pertinent inquiry why, if tuberculosis be preventable, it is not prevented? and some answer to this question will be insisted upon by the public Mr **SHALLCROSS** has, we believe, taken an important step towards supplying it He has shown that the municipality of one of the chief provincial cities quietly accepts an abnormal death rate many of the causes of which are well known and even conspicuous, and he considers that nothing more than half measures have been employed for dealing with them Mr **SHALLCROSS** places the responsibility for these unnecessary deaths upon the municipality, and it is difficult to see in what respect his argument is defective or why it should not be applied in other places and to other authorities

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The Nature and Etiology of Cancer.

CANCER theories have been propounded for generations almost as a matter of course As a result there has accumulated a plethora of speculation based upon certain facts, the number of which has shown an annoying tendency not to increase Those men who in their day have been most in touch with the trend of scientific thought and progress have formulated theories which have been sober efforts to mould anew the same old facts into a form in keeping with the sum of human knowledge at the time We may almost say that each decade of the past half century has had its cancer theory *par excellence* Each decade has also had its share of fantastic speculations—wild shots in the dark—only justified apparently by the fact that their authors were the first to give them publication The quack who proclaims that he has a sovereign remedy ' for the largest spider cancers, drawing them out with all their tentacles ' or " causing them to drop out like bulbs with roots on them ' by means of a " draft with more business in it than a dozen plasters is not wider of the mark in treatment than many who even to-day attempt to explain the mystery of cancer by adding one more to the already too numerous hypotheses The theories of the past and of to day fall into the same two categories the explanation is sought either in causes intrinsic to the body or in the influence of extraneous agencies on the body The problems of cancer are nowadays believed by many to require more resources than individual effort can supply The recognition which has thus far been accorded to the combined efforts of the Imperial Cancer Research Fund and other similar organisations in this country and abroad indicates that the individual investigator who has not also the backing of some extended organisation will in future work under greater disadvantages than in the past

In the regulations of 1793 relating to infectious diseases in Germany "cancer was included At the present time there is a strong movement in that country, headed by **VON LEYDEN**, to make cancer a notifiable disease The evidence on which ' cancer" was included among the infectious diseases of 1793 may have been more convincing at that time than any which the advocates of the infectious nature of cancer are able to adduce to-day The parasitic theory of cancer is the modern expression of a belief in an extrinsic causation Macroscopic, microscopic, and ultramicroscopic parasites have been asserted to stimulate cells to cancerous growth The alleged parasites have been cultivated and they have been seen to proliferate on the warm stage of a microscope The limited epithelial proliferation in some of the most infectious of diseases—e g , vaccinia—has been compared to the unlimited growth in cancer, and to give point to the argument the two have been designated "epithelioses' and 'epitheliomas respectively The belief in the parasitic nature of cancer may be defended by the assertion that the parasite differs from any form known, so that although cancer is an infectious disease it is so in an entirely new sense The belief in a parasitic etiology is obviously a manifestation of a reaction in what may be styled the bacteriological epoch against the cellular teaching The **COHNHEIM** theory postulated the occurrence of "embryonic rests the sites where they occurred and their possession of powers of growth Time has shown that embryonic rests do frequently occur but it has also as surely shown that displaced embryonic or adult cells are not endowed with unlimited powers of proliferation The negative results of all previous conceptions of an intrinsic etiology naturally led to a reaction in favour of the extrinsic theory and to the development of the parasitic or infectious hypotheses on rational and even irrational lines Its advocates have repeated the errors made by those whose views they have sought to replace They have postulated infectivity and the possession of powers of growth by infected cells, but the facts have refused to keep pace with such hypotheses and have shown in the few cases in which cancer has been experimentally transmitted to a new host that there is nothing of a true infection but only a continued growth of the original cancer cells themselves

It is a sure sign of the waning power of one cancer theory when following a new lead fancy begins to run wild along other lines Recent research has added some new facts to our knowledge of cancer, has placed the problem upon a more comparative basis than has hitherto been attained, and has adduced proofs in support of the view that the problems of cancer as they present themselves throughout the vertebrate kingdom are essentially cell problems All that the original observers have done has been to record their observations and to formulate what they believe may be useful, if contradictory, working hypotheses Before even these observers are at one as regards the interpretation to be put upon some new features in the division of cancer cells, or the facts themselves have received general recognition, the speculator is again to the fore with dogmatic statements backed by no proofs. At the present time our knowledge is so limited that it is wise to avoid entirely all dogmatic utterances, and in this connexion we refer our readers to the account of two demonstrations at the Oxford meeting of the British Medical Association which is published in this issue of THE LANCET. One of these demonstrations claimed to show that in a malignant growth the cells have taken on a likeness to reproductive cells, and the other demonstrated the parasitic nature of malignant disease. In each case the work is a model of what scientific work should be, the investigators have taken all possible pains to eliminate error, to be clear, and not to make extravagant claims. To the value of the work done by Professor J. B. FARMER, Mr. J. E. S. MOORE, and Mr. C. E. WALKER, we have already borne testimony in our columns. The researches of Dr. W. F. ROBERTSON and Mr. H. WADE show that the school which regards bacterial infection as the origin of cancer is also active. Let those who in future essay to advance our knowledge of cancer regard it as their first duty to add *new facts* to those long known. They may be more difficult to find than new explanations of the old ones but their accumulation will assuredly point somewhere much more definitely than the too many explanations of the old facts have done.

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The General Management of Chronic Diseases of the Heart.

IN a paper which appeared in our columns last week by Dr. J. HILL ABRAM attention was drawn to certain points in the diagnosis and treatment of heart lesions, the practical lesson of the writer being that the therapeutics of chronic diseases of the heart present many problems which demand greater attention than is usually devoted to them. The treatment of well-marked cardiac failure is understood by practitioners and appreciated by patients, but when the malady has assumed a more chronic condition the perseverance of the medical man and the patience of the sufferer are both severely taxed. During what may be termed the acute stage of cardiac disease all efforts are devoted to the establishment of satisfactory compensation—the mechanism of the circulation has to be adjusted—but subsequently the maintenance of that compensation is equally important and demands a vast amount of care and attention. The hearty coöperation of the patient with the efforts of the practitioner is necessary for a successful result, but unfortunately it is an open question how much the former should be taken into the confidence of the latter. As a rule of life, as well as of sensational fiction, confederates only succeed when they are completely candid with each other. But we doubt whether it is beneficial, as Dr. ABRAM would have us think, that the exact state of affairs should be explained to the sufferer from chronic heart disease. The use of the term "heart disease" to a patient is frequently productive of great depression, which it is important to avoid, whilst the necessary injunctions can generally be given with sufficient emphasis without either minimising the seriousness of the condition or pronouncing words that to the lay mind sound like a death warrant. There is among laymen a general impression that "heart disease" is incurable and to some extent, of course, this is right. But the physician is aware that if certain maxims are observed in many cases life may be prolonged for some years, for a sufficient number of years, perhaps, to enable the patient to die of old age. And the mode of living that should be enjoined upon the sufferers from chronic heart disease does not necessarily entail very irksome restrictions.

There are certain principles which have particularly to be borne in mind in directing the management of a case of chronic cardiac disease. Three of these are of the utmost importance—namely, (1) to sustain the force of the heart; (2) to insure that its nutrition is maintained; and (3) to reduce the peripheral resistance. It is to the first of these that the main efforts are usually directed but the other two are of equal, perhaps of even more, importance. Drugs alone cannot be relied upon, although their influence in certain cases and directions may be very marked. Success in treatment greatly depends upon the manner in which the patient controls his whole mode of life. The force of the heart, it is true, can be most readily sustained by such drugs as digitalis and strychnine but its nutrition can more easily be maintained by means of massage and the mechanical methods introduced by ZANDER of Stockholm in 1872, the graduated walking exercises of OERTEL, and the resistance exercises of the brothers SCHOTT. The object of all these measures is to stimulate the arterial circulation in the muscle, to hasten the venous currents, and to promote the passage of lymph through the lymphatic channels; the metabolism of the body is thus maintained, and digestion is improved in those individuals who from any cause are unable to take active exercise. Massage in particular is able indirectly to influence the coronary circulation in those who are bed- or sofa-ridden and thus the desired improvement in the nutrition of the cardiac muscle is brought about. Graduated exercise has been found to be a valuable therapeutic measure if carried out under skilled advice. It probably acts in two ways—partly, as we have pointed out, in improving nutrition and partly by reducing the peripheral resistance. We need scarcely remind our readers of the well-known physiological fact that a muscle in action requires more blood than when at rest; consequently sustained moderate use draws a quantity of blood from the general circulation into the muscles and so relieves the distended chambers of the heart. In our opinion, sufficient stress is not generally laid on the relief that may be given to the heart by bringing about dilatation of the arterioles. This may be accomplished not only by exercises of the nature above suggested but also by the administration of such drugs as the alkaline iodides and carbonates, or by nitro-glycerine or nitrite of amyl. Great assistance can be rendered by careful regulation of the patient's diet, the state of the bowels, and the daily amount of ordinary exercise, for by such general disciplinary attention the special therapeutics, whatever their nature, are much reinforced.

There are certain symptoms caused by defective cardiac power which add greatly to the patient's distress but which often do not receive adequate attention. Dyspnœa, palpitation, and "dropsy" are phenomena which the laity constantly associate with "heart disease," but apprehensiveness, restlessness, sleeplessness, and digestive troubles are less obviously to be attributed to a cardiac cause. Nevertheless they often exist and if they can be overcome great general improvement will be found to follow. An easy and regular circulation through the brain is accompanied by a sense of security and comfort; when the cerebral circulation is insufficient certain nervous manifestations are likely to ensue. The means which we have already indicated will naturally be the chief elements in lessening those symptoms but much can be done by a judicious and tactful practitioner in reassuring the patient and calming his fears. To procure sleep in cardiac cases may sometimes be a matter of great difficulty. Amongst the less powerful hypnotics which are employed in cardiac cases we are inclined to give the first place to chloralamide. The amount may gradually be increased to considerably beyond the ordinary pharmacopœial dose and its use may be prolonged without harm. The dyspepsia of cardiac disease is also difficult of treatment. The old French maxim that a patient with heart disease complains of his stomach and a patient with gastric disturbance of his heart may be generally accepted. If the circulation of the stomach is disturbed digestion is, of course, interfered with and the correct treatment will be to improve as far as possible the cardiac power. But this does not mean that the therapeutic measures are to be solely cardiac in intention; on the contrary, the symptoms of dyspepsia may often be combated with appropriate remedies. In short, we must never forget, and must never allow our patients to forget, that by general treatment much may be done for patients suffering from chronic disorders of the heart.

Annotations.

"Ne quid nimis."

THE PRESIDENTIAL ADDRESS AT THE PHARMACEUTICAL CONFERENCE: THE MEDICAL MAN AND THE DISPENSING OF MEDICINE.

THE address to the members of the British Pharmaceutical Conference, which meets this year at Sheffield, was delivered by the President, Mr. T. H. W. Idris, the mayor of the borough of St. Pancras, on August 9th and will be published in the *Pharmaceutical Journal*. We recommend our readers to read it there, as it will be found both of interest and instruction. Most of the address was, as was to be expected, of more concern to pharmacists than to medical men, but Mr. Idris's remarks upon the chemistry of the essential oils have a wider bearing than appears at first sight. He showed how the superiority of natural essential oils over the synthetic preparations was due to the fact that the natural oils are chemically impure. So in the same way the superiority of pot-still brandies or whiskies over the fluids which manufacturers euphemistically call "blends" is due to the fact that the genuine pot still spirit is chemically impure. Mr. Idris passed on to consider the position of poison legislation and pharmacy legislation and referred to the Pharmacy Bill which failed to obtain a position this year in the House of Commons. It is much to be hoped, however, that next year will see some legislation carried whereby absolutely unqualified persons may be prevented from trading as pharmaceutical chemists or from dealing in poisons intended for internal use. Mr. Idris next referred to our singularly lax system of death certification and concluded his address by dealing with the difficult question of dispensing by medical men. This is the portion of the address which has most interest for members of the medical profession and we give Mr. Idris every credit for the temperate way in which he stated his views. In his address to the Pharmaceutical Conference which met last year at Bristol Mr. Idris spoke on this matter at length and he returns to the subject with zeal.

> "It is an anomaly," he says, "that chemists dispensing should be governed by certain regulations but that a doctor should be free to carry on the important function of dispensing in whatever fashion he [illegible] chemist."

The question of medical men dispensing their own drugs must always be a difficulty, and many would welcome a change whereby the public came to recognise that medical fees were due for expert advice and not for something in a bottle. But in many districts there is not a large enough population to support a duly qualified pharmaceutical chemist as well as a medical man and it would be impossible, as far as we can see, to devise legislation which should prohibit a medical man from dispensing in a district where a pharmaceutical chemist was available while allowing him to do so in the contrary case. Mr. Idris points out that pharmaceutical chemists have no wish to usurp the functions of the medical man and this is no doubt true of the best of them, but we have heard of counter prescribing. The preventing of pharmaceutical chemists from prescribing seems to us as difficult by law as the preventing of medical men from dispensing. So long as any person is allowed to practise medicine provided that he does not imply that he is a registered medical man it must be unfair to impose particular disabilities upon a class which, though uneducated in medicine, yet knows something of practical therapeutics. And so long as the community cannot pay both the medical man and the dispensing chemist the medical man will have to discharge the double duty.

THE ADULTERATION OF FOOD AND DRUGS.

IN an annotation which appeared in THE LANCET of June 25th, p. 1807, under the title "Bread and Butter," attention was called to the observations of Dr. William Collingridge upon the substitution of other fats for butter, particularly in the case of "bread and butter" sold as such in small eating and coffee houses in London. The report of Mr. Edward Sergeant, medical officer of health of Lancashire, contains an analysis of the prosecutions which took place in that county under the Sale of Food and Drugs Acts during the quarter ending June 30th, and in the particulars given the adulteration of milk and butter and the passing off of other substances for the latter are conspicuous. Within the period named legal proceedings were taken in 52 cases and in 42 of these the magistrates, having found that the article sold was not of the nature, substance, and quality of that demanded, inflicted fines which cannot be regarded as outrageously severe, for they amounted only to £82 19*s*. in all. In many cases only the payment of costs was ordered. Of the ten charges upon which there was no conviction two were withdrawn after the conviction of the defendant in another case had been secured, and four were dismissed upon the defendant producing a warranty from the dealer who had supplied him. Of the remaining four, three were dismissed by the bench and one was withdrawn. Of the 42 convictions obtained six related to butter, all but one being in respect of excess of water, and the sixth being grounded upon the presence of 0·94 per cent. of boric acid. Eight were for margarine sold without proper intimation of its character. 16 convictions were obtained in milk cases, two on account of the presence of formaldehyde in the proportion of approximately 1 to 100,000 parts, two on account of subtracted cream, and the remaining 12 for added water. Thus substitution and adulteration in the case of dairy produce were responsible for 30 out of 42 convictions in which the purity of the food of the people was involved. Of the remaining 12 no less than seven successful prosecutions were in respect of pepper, which was mixed chiefly with its own husks bleached or partly bleached and dyed; in one instance, however, ground olive stones formed the adulterant. There were two cases of selling whisky and one of selling rum under proof and there was an important conviction for the sale of brandy containing upwards of 70 per cent. of neutral spirit not derived from grapes. With reference to this it may be noticed that two charges were dismissed of selling as brandy spirit not to any extent derived from grapes. This was done upon warranties being produced from the original vendors and these were impounded by the court. The remaining conviction making up the total was for selling as golden syrup a mixture containing 50 per cent. of starch sugar syrup. The greatest amount of adulteration and deception therefore, according to these figures, takes place in those articles of food the purity of which is of most importance owing to their being articles of universal consumption and owing to their forming an important portion of the diet of children.

THE CASE OF DR. F. J. HICKS.

As we have announced already Dr. Frederick John Hicks was acquitted last week at the Central Criminal Court where he was indicted on a charge of having procured criminal abortion upon a young married woman. There were circumstances about the case, all of which are obvious to our readers, that made the issue appear doubtful. Neither Dr. Hicks nor those who assisted him in his defence could possibly have been blind to the force of some of the arguments of the Crown, so that the protracted period of delay during which he was under remand must have been a time of terrible anxiety for him. We congratulate him upon the decision of the jury, whose verdict discharges him from the case without a stain upon his character, and who, in rendering their verdict, certainly acted in complete accordance with the evidence. Leaving aside many weighty considerations that made Dr. Hicks's guilt improbable, and looking at the charge only as it was formulated, it must not be forgotten that the alleged criminal act was one of extraordinary imbecility. Dr. Hicks was accused of having attempted to procure abortion upon a young married woman by inserting a self-retaining stem-pessary into her uterus, sending her home with the instrument still within her, in case, as it were, any doubt should arise as to the nature of his illegal operation. Surely if his action had been criminal in intent his folly was incredible. Secondly, the incriminating correspondence which, as we consider rightly, was not held by the jury to be incriminating at all, was lying loose in his consulting-room. It is an old experience of the police in criminal cases that the most damning letters are occasionally retained by accused persons, but that a physician having the crime of criminal abortion upon his conscience should leave the documents in proof of the same open upon his desk for months together passes the bounds of belief. The use of the intra-uterine stem-pessary, though so fatuous a method of procuring abortion, was formerly the recognised treatment for the reposition of a displaced uterus. This was the teaching in the medical schools when the expert medical witnesses in the case, Dr. Champneys, Dr. Lewers, Dr. Horrocks, Dr. Luff, and Mr. Pepper, for example, were students. Gynæcology has developed during the last 20 years and Dr. Hicks's method of treatment would not now be considered up to date in most cases. But if his procedure was obsolete when directed against anteversion, as a method of procuring abortion it would have been so astoundingly incriminating for the operator that the jury rightly agreed to acquit him of criminal intent.

THE METROPOLITAN HOSPITAL SUNDAY FUND.

At the Mansion House on August 9th the Lord Mayor of London presided at a meeting of the Council of this Fund, which was held for the purpose of receiving the report of the committee of distribution. The committee recommended awards this year to 215 institutions. The amount of collections, including interest from the Court of Chancery, to the present time is £59,360. The distribution of £56,371 *8s. 4d.* to 157 hospitals and 58 dispensaries is now recommended. This year 218 institutions have made application for grants from the Fund, being seven more than in 1903 and just double the number that applied in 1874. The adoption of the report, which was carried unanimously, was proposed by the Lord Mayor and seconded by Sir Sidney Waterlow, who for the past 32 years has acted as chairman of the distribution committee. Among the speakers who referred to matters of pressing importance with regard to hospital administration were Sir Henry Burdett, who pointed out that those institutions which were controlled by a medical superintendent showed less expenditure per bed, and Dr. J. G. Glover, who called attention to the increasing and curiously varying cost of out-patients in different hospitals. The amounts per patient varied from 1*s.* 6*d.* to 7*s.* 4*d.* per head. When presenting, as usual, the list of awards we may take the opportunity to refer at greater length to some of the important matters touched upon at the meeting.

THE PASSING OF THE CHIMNEY.

Industrial pursuits inflict upon us many kinds of offence and commendable as is the activity of our public health authorities they have, of course, no power to remove offences which affect the eye. Such a power would open the door, we suppose, to vexatious proceedings, and yet who shall decide which is the greatest offence, that which affects the sense of smell, of sight, or of hearing? There can be little doubt that noise can be a source of ill-health just as much as evil smells, but it would be more difficult perhaps to establish that a blot upon the landscape is in the same degree harmful. All the same few will deny that a prospect can be, so to speak, noisome to the eye and when the harmony of a prospect is ruthlessly disturbed the eye that detects it transmits a feeling of pain to the whole system. "It gets on one's nerves," we say of an ugly sight as of an ugly sound, and the expression has a substratum of physiological truth. Progress day by day teaches us how barbarous are some of our industrial methods. What can be more hideous to the sight than a forest of factory chimneys and, after all, the chimney is man's simple but clumsy design for the creation of a draught, and the landscape must be marred because the manufacturer wants an abundant supply of oxygen to feed his furnace fires. There is some hope, however, that the factory chimney may soon give way in favour of a system of forced draught. Already destructors, which have hitherto sadly disfigured many a picturesque spot on account of their ugly chimney shaft, are being constructed without a chimney. A simple method of forced draught replaces the function of the offensive shaft, and not only is it more effectual for purposes of combustion, but it reduces the immense cost entailed in constructing a chimney stack 100 feet or so high. We may be sure that the economy of the principle will appeal to a manufacturer even if a sense of beauty does not. The day may come when domestic chimneys may be done away with by the adoption of the forced draught and at length the realisation of smokeless London is suggested as a pleasing outcome.

MEDICAL EDUCATION IN ST. PETERSBURG.

THE new statutes of the St. Petersburg Women's Medical Institute have just been published and open a new era in the history of the education of Russian women who in respect to medical education and practice are practically on the same terms now as doctors of the male sex. They may obtain diplomas, pursuing their studies for medical degrees in the universities of the country and in the Military Medical Academy. "Henceforth," says the *Novosti*, "the Russian woman, having brilliantly distinguished herself in various scholarly careers, is free to participate in the general work of the laborious field of medicine." The Russian female medical students have for a long time been distinguished for their energy and enterprise in several of the best known continental schools and they will for the future have proper opportunity for exercising their talents in their own country. The new law limits the age of those who may be received into the institute to women not younger than 19 years and not over 28 years. It also limits the number of students of the Hebrew faith to 3 per cent. It is by such funny exhibitions of barbarism that Russia is always revealing herself to the rest of Europe as hopelessly behind the times. The female medical practitioner is not, of course, unknown in Russia. The first Russian lady doctor to practise was Madame Sussolovou who, having obtained diplomas abroad, for a long period had a successful practice in St. Petersburg.

OCULAR PARALYSIS IN GRAVES'S DISEASE.

IN addition to the usual ocular signs of Graves's disease paralysis of one or more of the extrinsic ocular muscles occasionally occurs. In the *American Journal of the Medical Sciences* for July Dr. W. C. Posey has recorded the following case. A woman, aged 43 years, was admitted into hospital on account of failure of sight. She had had poor health for about ten years and suffered from palpitation of the heart and nervousness. For several years she had suffered from pains in the supra-orbital and temporal regions. Her sight had been good until two months before she went to the hospital, when she began to see double. She was not aware of any swelling in the neck. There was slight proptosis, especially of the left eye, and the palpebral fissures were widened. She fixed with the right eye, the left being rotated downwards and outwards. Von Graefe's sign was found in both eyes at times; at others it could not be demonstrated. The left eye could not be rotated upwards above the horizontal line; external and internal rotation were limited; downward rotation was good. A study of the double images showed that there was paralysis of the sixth nerve and of that portion of the third which supplies the inferior oblique and superior and inferior recti muscles. The thyroid was slightly prominent and the pulse was 110. Prolonged rest in bed was recommended but after a few weeks the woman became impatient and left the hospital unimproved. Ocular paralysis in Graves's disease may be limited to a single extrinsic muscle or may affect all the extrinsic muscles of one eye; occasionally both eyes are affected. Paralysis of the ciliary muscle has not been recorded, nor of the associated movements of the eyes except convergence. Paralysis of the levator palpebræ superioris may occur and sometimes is accompanied by paralysis of the other branches of the third nerve. Paralyses of other cranial nerves have been reported. Bristowe has described a case in which ophthalmoplegia externa came on three years after the onset of Graves's disease. There were also slight hemianæsthesia, colour blindness, and loss of smell and taste on the same side. The patient died from bronchitis and the necropsy showed no changes to account for the paralysis. In a case reported by Warner there was double ophthalmoplegia externa with paralysis of the fifth and facial nerves. Jendrassik has described paresis of the muscles of mastication in conjunction with paralysis of the ocular and most of the facial and palatal muscles. The pathology of paralyses in Graves's disease is not definitely known. The cases of more or less complete ophthalmoplegia externa, and especially those in which there were associated lesions of the facial, hypoglossal, and glosso-pharyngeal nerves, seem to show that the paralysis is of central origin and due to nuclear changes. The paralyses seem to be only functional, for they are sometimes transient and the necropsies which have been made were negative.

A SAFETY HELMET FOR FIREMEN AND OTHERS.

WE have received from Dr. Guglielminetti of Paris a description of an apparatus devised by him for firemen, rescue parties in mines, and others for whom it may be necessary to move about with safety in an irrespirable atmosphere. The details of the apparatus are strongly reminiscent of the cylindro-conical projectile devised by Jules Verne for the journey to the moon and in which J. T. Maston lived for a week and grew fat. It consists of a helmet something like that of a diving dress but made of aluminium instead of copper. This helmet is entirely cut off from the outside air by means of a pneumatic collar. Underneath the chin piece of the helmet is a sack, called the respiratory sack, which, to commence with, is full of air. The oxygen of this air is constantly renewed from a small cylinder of that gas which is carried at the back of the person using it. The expired air passes through some cooling coils and is purified of its carbon dioxide by means of caustic potash, while the nitrogen is simply used over again. Enough oxygen can easily be carried to enable a man to stay for at least 30 minutes in an irrespirable atmosphere and, in fact, on July 2nd a fireman remained for 38 minutes in a closed cellar filled with the smoke from damp burning straw and came out none the worse. From the accounts of experiments made with the apparatus it would seem to be of great value for rescue parties in mines and for firemen, though in the case of the latter, as the oxygen is compressed in the cylinder, the question of possible explosion from heat might have to be considered. The Paris fire brigade, however, appear to be well satisfied with the apparatus.

PUBLIC ELEMENTARY SCHOOLS AND MEDICAL INSPECTION.

ON August 2nd the council of the Richmond (Surrey) corporation, acting upon the advice of the education committee, sanctioned the appointment of the medical officer of health as medical officer to the education committee at a remuneration of 50 guineas per annum for the purpose of medical inspection of scholars attending the public elementary schools and for other duties under that committee. We are glad to see that the local authority has recognised that it is its duty to obtain medical inspectors for scholars attending the elementary schools, and it is without doubt an advantage that such inspection should be performed through the health department. It is also gratifying to see that the education authority has grasped the principle that such duties are additional to the ordinary work of the medical officer of health, as is shown by the grant of extra remuneration. In addition to this departure the education committee has granted a sum of 25 guineas to the medical officer of health and the borough surveyor respectively for a joint report upon the structural and sanitary condition of the public elementary schools. The report deals with nine schools and the reporters say that in general the schools have been well kept up. In most of them, however, various structural alterations and additions appear to be necessary. Altogether we congratulate the Richmond corporation upon its sensible attitude. There is scarcely any agent so capable of spreading infectious disease as a public elementary school and to no institution does the proverb, "Prevention is better than cure," so forcibly apply. Careful inspection will not only bring about saving of life and prevention of disease but will also spare the pockets of the ratepayers.

A SUNDAY LEAGUE EXCURSION AND RAILWAY MISMANAGEMENT.

HOW badly some of our railway companies—and the South-Eastern Railway in particular—muddle through their attempts to deal with a holiday crowd was in evidence last Sunday at mid-day at Charing Cross Station when one of the platforms was packed with men, women, children, and babies going on a Sunday League excursion to Margate, Ramsgate, Hastings, and elsewhere. There was no train at the platform so that people could take their seats as they arrived. The officials waited until the platform was so crowded that no one could move and then they backed the train into the station, with the inevitable result—a mad and dangerous struggle for seats, rendered all the more severe by the knowledge that all cannot possibly be wedged into the train, in which women and the poor little children and babies suffer considerably. It is no exaggeration to say that the scene last Sunday on the Margate train being backed into the station was a positive disgrace to the South-Eastern Railway and one for which the directors should be called to account by the Board of Trade. It was the worst specimen of gross and culpable mismanagement short of actual loss of life which could well be conceived, and it was a marvel that many were not swept off the platform and killed or injured by the approaching train. A holiday crowd of any class will push and struggle to gain their end, and the lower down in the social scale the crowd may be the keener will the struggle be. And a railway company should be compelled to take at least reasonable steps to prevent accidents and probable loss of life. We have very grave doubts whether the excursions promoted by the Sunday League are not extremely harmful. It cannot be good for men or women and still less for children and infants to spend some five hours in a crowded train and to be rattled over a badly laid road in an inferior carriage for the sake of spending a short time at an overcrowded seaside resort. The Sunday League would do better to transfer its subscriptions to one of the genuine agencies which exist for giving children and other workers a holiday in the country of decent length.

CANADIAN MEDICAL ASSOCIATION: VANCOUVER MEETING.

THE meeting of the Canadian Medical Association will take place on August 23rd, 24th, 25th, and 26th at Vancouver, British Columbia, under the presidency of Dr. Simon J. Tunstall. Vancouver has a splendid harbour, has wonderfully grown since 1886, and is the western terminus of the Canadian Pacific Railway. At the opening meeting on August 23rd at 10 A.M. Mr. A. W. Mayo Robson will deliver an address on Surgery and Dr. C. E. Dudley will deliver an address on Gynæcology. There will be numerous papers read by men prominent in the profession from Eastern Canada, the United States, and Great Britain. The entertainment committee has made arrangements so that the ladies accompanying the parties will be well provided with entertainments during the time the meetings are in progress. On August 25th an excursion will be made to New Westminster, the former capital of the province, 15 miles from the mouth of the Fraser River and one of the termini of the Canadian Pacific Railway, and a visit will be paid to the Asylum there; thence boat will be taken to Steveston to see the salmon canning. On August 26th steamer will be taken across the strait to Victoria, the capital, on Vancouver Island, where a garden party will be held at Government House, and in the evening a reception will take place at the Parliament Buildings. On August 27th those who desire will have an opportunity of visiting Williams Head Quarantine Station and Esquimalt, called the "Gibraltar of the Pacific Coast," a few miles north-north-west of Victoria. Arrangements have been made for excursions to Kaslo, on Kootenay Lake, and to Golden, and for those who wish to go further north special rates may be secured to Port Simpson by Dixon Sound, to Atlin in the neighbourhood of the Chilkoot Pass, and to Dawson for the Klondike region. Those going from eastern points who wish to avail themselves of the special rates are advised to forward their names to Dr. George Elliott, general secretary, 129, John-street, Toronto.

THE PROHIBITIVE PRICES OF WINES AT HOTELS.

FEW who know the routine life of hotels will be surprised to learn that their receipts are very sensibly diminishing in spite of the fact that the number of visitors is not appreciably less. The situation is perhaps to be explained by the heavy charges made for wine, which are the less justifiable because the bottle for which a high price is charged rarely contains even a sound wine. Red wines are seldom good at a hotel; sparkling wines may, as a rule, be trusted because the labels are the original shipper's, but they are sold at a price about 100 per cent. or more over the merchant's price. The visitor may to some extent escape such fleecing by ordering a bottle of good matured whisky and drawing upon it as he requires, mixing it with mineral water, or with plain water when the charge for the former happens to approach the sum of a shilling. It is much to be deplored that people who prefer the agreeable stimulating qualities of sound wine should be forced to get its mere alcohol equivalent in ardent spirits. Yet spirit drinking at meal times at the hotel is now the rule, as a glance round the dining-room will instantly show. There is no more agreeable or wholesome accompaniment to dinner than a sound, soft, non-acid, and light claret, and for such most wine drinkers would pay a reasonable price. If, however, they are inclined to choose something better than a mere *vin ordinaire* they know from experience that it will cost at least from 6*s*. to 12*s*. a bottle and its taste may throw doubt on the label. Sound vintage clarets may be purchased through a wine merchant at from 2*s*. to 4*s*. a bottle. In defence it is said that without big profits on the wines hotel keeping would not pay. We do not believe that a hotel cannot be run on successful lines without inflicting upon its *clientèle* exorbitantly expensive wines, and we are glad that the public attitude seems to be the one that is likely to produce a change. The man who has a wholesome preference for good wines and who generally eschews spirits should not be compelled to take refuge in the latter because of the unreasonably high charges for the former. Many hotels complain that their business is only done in seasons, in fits and starts, and therefore in these seasons they must reap their harvest. Their season, we are sure, would be a more enduring one if they would supply good wines at reasonable prices.

A VISIT OF FRENCH MEDICAL MEN TO LONDON.

THE arrangements for entertaining our French medical and surgical *confrères* who hope to visit us at the commencement of October have advanced in several directions since we last referred to the subject. Our visitors will be entertained at a dinner to be held at the Hotel Cecil on Oct. 12th. Sir William Broadbent, the chairman of the executive committee in London, will preside, and the French Ambassador, who was invited to be present but who will be out of town at that date, will be represented by M. Daeschner, First Secretary of the Embassy. The Hospitals Medical Society of Paris at its meeting held on July 8th accepted with pleasure all the items of the programme drawn up by the London organising committee and expressed its intention of doing everything in its power to make the visit successful.

JUVENILE SMOKING.

A BILL for the prevention of juvenile smoking has been presented in the House of Commons by Mr. R. Rigg and is supported by Colonel Bain, Mr. C. P. Allen, Mr. Cathcart Wason, Dr. Macnamara, and Mr. G. Lambert. The chief clause is as follows: "No person under the age of 16 years shall smoke or use tobacco in any form and any such person so doing shall be liable on conviction to a penalty not exceeding 10*s.* for each offence." Another clause forbids anyone to sell, give, or supply tobacco in any form to or for the use of any person under the age of 16 years and provides penalties for such an offence, the onus of proof of age to lie on the person charged with a breach of provisions of the Act. We give the promoters of this Act every credit for wishing to stop what is undeniably a danger to the health of the community—even though it be a much exaggerated danger—but we feel compelled to ask them how they are going to see that the provisions of the Bill are to be carried out? How for instance will they stop the street Arab from picking up "fags" and smoking them, and how is the unfortunate tobacconist to be sure that a customer is over the appointed age? Supposing again that a street boy is caught smoking, is charged and fined, who is to pay the fine? If his parents or guardians can be found they may be mulcted, but this will not affect "the soaring human boy" in the least, and should his father incontinently flog him the result will probably be a summons for assault. The Bill as drafted appears to us to be well-meaning but futile.

THE NATIONAL SOCIETY FOR THE PREVENTION OF CRUELTY TO CHILDREN.

THE annual report of this society has just been published and contains certain interesting particulars of its work and of its requirements. We learn from it that while the number of cases investigated exceeds that of last year by 2544 the prosecutions have been fewer by 135. It may be noted by any who may still entertain doubts as to the necessity for the work done by this society that in 556 cases children died from the cruelty to which they had been subjected. 56 new centres have been opened by the society. The financial record is a somewhat anxious one. There is a deficit in the year's account of £4818 and for the first time in seven years there has been a decrease in income which is £1301 less than that of last year. On the other hand, it is encouraging to find that the amount derived from annual subscriptions has increased by £566. The average cost per child is also less than formerly. Originally £1 4*s.* 2*d.*, it had fallen to 13*s.* 5*d.* last year and it is now 13*s.* The deficit referred to above is largely due to extension of the society's operations. We should be sorry to see any limitation of this work but it is obvious that sooner or later a want of funds must lead to diminished energy unless the public generally and members of local branches more particularly will see to it that money is forthcoming. It is hardly to be expected that the parent society can without public assistance fully supplement the resources of the ever-widening circle of its offshoots. There is no need for us again to commend the work itself. The existence of cruelty undoubtedly widespread and deliberate is its justification; its success and the respect, even the esteem, in which it is held among the class which it is intended to control form a gauge of its quality.

ARRANGEMENTS are being made to obtain special tickets at a reduced return fare for those who intend to be present at the Ophthalmological Congress at Lucerne on Sept. 14th and following days. Those who wish to avail themselves of the privileges afforded by the railway and steamboat companies to members of the congress should communicate at once with Mr W. H. Jessop, 73, Harley-street, W., stating in each case the number of tickets required. The purchase of these tickets does not involve travelling in a party and each member will be free to choose the day and train he may prefer.

THE Revaccination Bill which was presented to the House of Lords by the Duke of Northumberland and read a first time on May 16th was read a third time on August 5th, passed, and sent to the House of Commons. Its provisions are, shortly, to provide for the revaccination of children within six months of their attaining the age of 12 years. At this stage of the session it is, of course, hopeless to expect that the Bill will make any further progress.

WE regret to announce the death on August 9th from angina pectoris of Sir William Mitchell Banks. Sir William Banks built up a surgical reputation for himself in Liverpool which extended throughout the country. His Lettsomian lectures on Cancer of the Breast, which were published in THE LANCET early in 1900, will be remembered as some of his most recent work.

WE have also to announce the death on August 10th, at the age of 80 years, of Sir Frederic Bateman, consulting physician to the Norfolk and Norwich Hospital. His fame, like that of Sir William Banks, was not confined to the city in which he lived, but was widely spread in England and on the continent. We shall publish extended notices of the careers of both these distinguished medical men.

THE death is announced from heart failure whilst cycling of Dr. T. Gilbart Smith, physician to the London Hospital and to the Royal Hospital for Diseases of the Chest, City-road. Dr. Gilbart Smith was only in his fifty-sixth year and the news of his sudden death has come as a shock to many friends.

Dr. William Gayton, who will shortly cease to hold the office of medical superintendent of the North-Western Fever Hospital after 34 years' service under the Metropolitan Asylums Board, has been presented by his medical colleagues with a silver tea service on his retirement.

1901 CENSUS: GENERAL REPORT.

THE concluding volume of the reports of the Census of 1901 has been published in the course of the week. This report is signed by the Commissioners, Mr. W. Cospatrick Dunbar, Mr. Noel A. Humphreys, and Dr. J. F. W. Tatham. Including appendices it occupies 375 pages and contains much interesting statistical matter. In justification of the lateness of its appearance the Commissioners explain that in addition to the magnitude of the work itself a number of unforeseen obstacles have from time to time arisen to prevent the completion of the final report as soon as was anticipated. They express the hope that the measures they have taken to insure accuracy will compensate for the delay in the production of the report and that the conclusions therein set forth will bear the test of reasonable criticism. Whilst fully appreciating the nature of the difficulties with which the Commissioners have had to contend, amongst which changes in the official staff have probably had a share, we think that in the present instance the delay, which the Commissioners state to have been unavoidable, is the less to be regretted because, with a few exceptions, the information contained in the report might have been culled from the census volumes already issued, it being simply a question of summarising facts scattered through the pages of some 50 county parts. After a rapid survey of the 191 pages of letterpress we have marked for notice a few salient points which seem especially interesting to our profession. For the rest we refer them to the report itself.

With the aid of the table of contents it is easy to recognise the order of arrangement of the report which is appropriately introduced by an interesting summary of census legislation during the past century. We note that instead of following the plan of distributing the census returns in three volumes it was decided, as more generally convenient, to publish the tabular matter of 1901 for each county separately, so that each county part should contain the whole series of census facts for the county and its various subdivisions. Accordingly, these parts were published as soon as they could be prepared in the order determined by their population; thus the part for the county of London, in which the particulars were given for more than 4,500,000 people, or about one-seventh of the population of England, was obtainable by the public in January, 1902, the part for Lancashire and Yorkshire following in rapid succession, the entire series being completed in February, 1903. The county parts were followed in April, 1903, by a volume of summary tables, being for the most part aggregates of the tables in the county volumes. In October of the same year there was issued an alphabetical index of the names of counties, boroughs, and other areas dealt with in the entire series of tables, together with their populations, and references to the pages in the county parts in which they may be found. The issue of the present general report completes the publications of the 1901 census.

Among the sections of the report which chiefly interest medical men is one on Physical Infirmities. Considerable skill and care appear to have been expended in the preparation of this section which contains a large amount of important information in no way derivable from the census returns. For convenience of description the physically afflicted are classed as follows: (1) the blind; (2) the deaf and dumb; and (3) the insane. Concerning the above-named infirmities the Commissioners remark that the machinery of an ordinary census is but imperfectly adapted to furnish the requisite particulars with that degree of accuracy which is essential for statistical purposes. It is because experience has impressed them with this conviction that they have abstained from entering into minute details which, had the data been more trustworthy, would have proved highly instructive and useful. In discussing questions concerning the relative prevalence of blindness the main difficulty lies at the threshold and consists in the adoption of a uniform standard to which all cases of blindness should be referred. What is "blindness"? is the important point to settle. The question has long occupied the attention of philanthropists in England and in other countries and the Commissioners think that those who may be responsible for the arrangements connected with the next census should take steps to obtain expert opinion as to what standard of vision should be held to constitute "blindness" and also to determine whether any additional methods should be adopted in order to obtain, if possible, more accurate returns of the number and condition of the blind. Similar remarks are applicable to the case of the deaf and dumb. For if the standard of "stone deafness" be abandoned in the case of those returned simply as "deaf" each individual must be left to adopt for insertion in the "occupiers' schedule" his own definition of what constitutes "deafness." The report contains numerous tables setting forth the numbers of the physically afflicted under each of the headings here specified. The proportion of blind persons in the population has diminished at each successive enumeration since 1851, in which year particulars of those afflicted in this manner were ascertained for the first time. It will, however, be noted that although the decrease in the proportion of the blind in the latest intercensal period was still considerable, yet the rate of decrease which had obtained between 1871 and 1891 has not been maintained since the latter year. During the decennium 1891–1900, as also in recent previous intercensal periods, there has been a decrease in the proportion of blind children in the country generally, and this lends support to the contention in the general report for 1891 that the decrease may be due to the more efficient treatment of purulent ophthalmia and other infantile maladies which may result in blindness. In this connexion there appears in the report a valuable paragraph showing the successive steps by which the "present position of matters relating to the blind" has been attained. To this paragraph we are indebted for much interesting information that is new to us, as it contains a categorical statement of the various statutory and other provisions by means of which amelioration in the sad condition of the physically afflicted has been affected.

Coming to that section of the report which deals with the insane the Commissioners seem to concur in the doubt entertained by their predecessors as to whether the value of the information relating to mental infirmities that may be obtained from the ordinary census schedules is sufficient to warrant the continued demand for such details at the hands of the English householder. It appears that in arranging the "occupiers' schedule" for the recent census, with a view to secure greater accuracy in the returns of the insane, a change was made by substituting the term "feeble-minded" for "idiot." This change was adopted as an experiment at the suggestion of persons officially concerned in the guardianship of the insane, who represented to the Commissioners that this substitution would certainly lead to greater accuracy in the returns, the term "idiot" being regarded as opprobrious and as likely to cause concealment of the truth. This substitution has doubtless resulted in the acquisition of more accurate returns concerning the number of insane children, but it has tended to the destruction of the returns as a means of comparison with similar data at previous censuses and this latter result the Commissioners greatly deplore.

AN OLD CHYRURGEON.

"THIS Book is in no way right but in Johannem Baxter hand, for he is the true owner of it. May ye 12, 1655." These words—"A damned cramp piece of penmanship as ever I saw in my life"—were written on the fly-leaf of an old worm-eaten volume which lay in the "twopenny box" of a London bookseller. The book was a collection of medical directions, formulæ, and aphorisms written by the once famous Nicholas Culpeper, "student in Astrology and Physick," and now that the methodical, and doubtless worthy, Johannes Baxter is no more we need crave no man's pardon for annexing, exploring, and enjoying its yellow, old-world pages. And indeed there is much therein recorded that is of more than passing interest and of the chief features none is more striking than the number of cures prescribed which became obsolete and discredited later, only to be rediscovered with much pomp and ceremony nearly three centuries afterwards. "Let his drink be water ...... boiled," for example, is a caution which was re-issued by the Battersea authorities only as recently as last month; and similarly, though we dare hardly claim that "the lungs of a fox beaten into powder" is a sovereign remedy for consumption—unless, indeed, the fox be tuberculous and inoculation is here foreshadowed—yet Culpeper must be allowed full credit for the following passage —

The character of Nicholas Culpeper as he stands self-revealed in his book shows him to have been of the proper professional stuff He is confident in his own powers, for at the outset he addresses his "Worthy Readers" thus —

> MY WORKS have merited such just applause in the world *though envied by some illiterate Physicians, that I am the more* confident to goe on doing that good which you have received by my former labours

And again he writes —

> I revised this Treatise of FEAVERS the Method of which was Galen s This I am confident, it containeth most excellent Truths

But he is not always so satisfied with himself or others in treating of the "*Mare or incubus*' (in modern terms, nightmare) he adds a note —

> I have been myselfe strangely troubled with this disease since the writing hereof and in a farre different manner from what here is written but the Margent is too small to hold the Story

And again, in discussing Melancholic he adds,

> Had this been to do again, I could have done it 10 times better

So, too, as regards others, though in his "Synopsis of Simples" he is an avowed Galenist, elsewhere we read —

> *Galen maketh great stir and so also doth Hippocrates, to prove two* sorts of Vertigo All Gallen s (*sic*) words may not be Authenticks no, nor Hippocrates his neither and neither Fuchsius nor myself were nor are so simple but we know

One feature about the book under discussion is the essentially personal tone in which it is written

> the same temperature? This then is strange "Let such as are *troubled with red faces abstaine from salt Meats Garlick Onions,* and Mustard, yea if he be a Welch Man or Woman he must abstain from roasted Cheese and Leeks, and that is Hell upon earth to them

These and many more *obiter dicta* show the friendly relations which existed between doctor and patient or nurse, only in more scientific writings on Arthriticalls, Renalls, and the like is a *more* impersonal attitude maintained On two points our author was well equipped for his profession In the first place, in accordance with Aristotle s dictum, he had experienced the evil in himself, for on one occasion only "much and vast expence of *Physicke" cured him And again he writes —*

> Have a care of trying quaint experiences it had once almost cost me my life in doing it upon mine own body

Secondly, he approached every question with an open mind Every means to the desired end was welcomed and judged on its merits Open air cures, water cures, anti toxins, homœopathy, allopathy, are all foreshadowed in his system, and we can see how Christian Science becomes in part defensible when we read the following extracts —

> *To Make Children s Teeth Cut*
>
> Besides all this I am of opinion that the tooth of a dead man hung about the neck of a child will do it far better than either I am not *determined to give my reasons at this time,* yet will I give you a very simile for it, the Tooth of a dead man born about a man instantly suppresseth the paines of the teeth as I have often found my selfe, when all other remedies have failed me, and if this be true why not the other?

Again, "of melancholie"—

> as love joy griefe etc, o eating of wicked and rest by these (!)

This last sentence, ascribing properties to food, which are usually confined to human beings, is typical of much of Dr. Culpeper's writing Herbs are talked of in this way—a special condemnation being reserved for onions and garlick "which be malignant"; and similarly when "meat" is *referred to as* "*hot* and *moist* " or "*cold* and *dry*" it is in a non culinary sense that the words are to be understood. Much of the language of the book is of course determined by the theories prevalent at the time and of these theories none was more prominent than that which ascribed all the ills of mankind to humours of various kinds and degrees, and when once the practitioner's task has been reduced to the formula ' Follow his humours," the prominence of dieting in the treatment follows as a matter of course Un*fortunately, medical science did not rest content with* dietings cordials cephaliques, and "induction of sneezing by Betany " In most cases bleeding is prescribed and one shudders to think of the patient of whom it is written "You must bleed him *often, because all* his blood is corrupted" Almost every complaint, "melancholick,' "fewver," what you will—is supposed to be amenable to this sovereign cure, and a climax is reached when bleeding of the nose (if not checked by the "smelling to a live toad ' or even less savoury substances) is to be stopped "by opening a veine in the ear!"

But we have not yet mentioned the weakest point in our old chyrurgeon s armour He styles himself "late Student in Astrology and Physick,' and it is evident from his writing that he thought the *former qualification to be not the less* valuable of the two "Oyle of Vervaine is medicinall for the Headache let it be gathered in the day and houre of Venus, the ascending fortunately" "For the Megrim (migraine) comb the head with a combe made of the horn of a Ram (I suppose it were best when the Sun is in Aries or at least when Mars is there); and this may doe it—for aught I know—if the disease lie within or without the skull" And again ' Both for this ' (a "second dayes" Ague) "and quotidian Agues I *have never missed* cure by giving only Cinquefoil, gathered in the hour of Jupiter, if it be possible, he being above the earth and truly I think it would be the better if the moon were aspected to him but I never observed it" "The right eye of a man or the left of a woman are under *the Sun the left eye of a man,* the right of a woman, are under the Moone"—which facts are emphasised as being of vital importance in curing "A Pin and Web in the Eye" But it is needless to multiply examples "Guess the rest from these," and from the "Signes of a Plague to Come"—chief of which are the "meetings of superior Planets, whereby not only the time but also the place where the Pestilence will most rage may be gathered as this Autumnall Pestilence of 1645 was by Mr Booker in his Almanack which was penned at Midsomer 1644" "But the learned in Astrologie may satisfie them*selves without me,"* he adds Only the layman reads such signs as have recently been manifested, "cold weather out of its season,' "dark and troubled aire," or "birds forsaking *their nests"*

We have travelled far since 1655 and astrology has been to the position of a rogue and a vagabond, but in its dicta were as the following racy advice as to taking an "earewig out of the Eare" —

Such statements provoke a contemptuous smile now, yet they were written by one who was in his own day the great successor of Hippocrates and Galen, who could pour contempt upon "our pitiful physicians" and on those who, "being ignorant of Astrology, cannot give a reason of the Physick they prescribe, a Parrot may be taught to be as learned," and who could write at the conclusion of *his* work, "Venitq salutifer orbi —Nich Culpeper"

THE FOLKESTONE CONGRESS AND THE SANDGATE SCANDAL

GENERAL propagandism is undoubtedly the main object of such congresses as that just held at Folkestone by the Royal Institute of Public Health Doubtless the members learn a good deal from each other. Life is short and there are so many phases to public health questions that no one has the time to master them all. Consequently it is an advantage to hear a summary giving the results of investigations that have been undertaken with more than usual care. The criticism the papers call forth are equally instructive. But though such discussions render the congresses in a measure self-educating, nevertheless their main usefulness is due to the impression they produce on the outside general public and its consequent reflex influence on legislature. The local papers give lengthy reports of the proceedings. There are festivities at which the leading sanitary reformers coming from all parts of the country meet and talk with the notable inhabitants of the town where the congress assembles. This is useful in regard to general questions such as the purity of the milk-supply, physical degeneration, the hygiene of schools, &c., but it is still more effective and fruitful if there happens to be some local grievance to which it is necessary to draw public attention. This was the case at Folkestone and it is satisfactory to note that the congress fully acquitted itself of its task in this respect. Evidently the most useful purpose to be served by the meeting at Folkestone was to help the local efforts that are made to do away with the so-called sanatoriums for the treatment of tuberculous patients at Sandgate. This is at once a local and a national question, and the discussion which arose on the subject, together with the resolution adopted, fully confirmed all that we have published in regard to Sandgate. Full freedom of discussion was allowed and this is proved by the fact that a speaker was permitted to declare that vaccination was the greatest fraud of the century and was supported by the medical profession because they made money out of it. It would have been easy therefore for anyone to have pleaded at least extenuating circumstances in favour of the Jones homes if it had been possible to say anything on that score. But no such attempt was made. The only effort made was to shield the boards of guardians from blame, and this not because the Jones homes were proper places to send paupers suffering from tuberculosis but simply because the guardians did not know of any other place. Then, again, at the meeting for the closure of the congress, when all the sections assembled in the Woodward Hall together with several members of the public, the resolution carried in the Section of Preventive Medicine was read out. This resolution, if applied, would render such places as the Jones homes impossible, yet no protest whatsoever was raised. The large and general assembly then voted unanimously that this and the other resolutions carried in the section should be handed over to the council of the Royal Institute of Public Health with the request to do all that is possible to carry out the desires expressed.

The Mayor of Folkestone was in the chair; other local authorities and notabilities were sitting round. The resolution, which had been seconded by the medical officer of health of Sandgate, was read out very distinctly. The Jones's homes are houses that form part of the main street of Sandgate and have no grounds of their own. But the resolution says that sanatoriums "should stand in their own grounds in an isolated position away from the general population." The Jones's homes are entirely dependent on the Jones family. These irresponsible persons may occasionally resort to the advice of a medical practitioner but there is no guarantee that they will follow such advice nor are their any means of compelling them to do so. The proprietors of the Jones homes have no professional standing or reputation to maintain. They are lodging-house or boarding-house keepers, free to accept or reject any advice that may be given. But the resolution carried in the Section of Preventive Medicine says that such homes should "be placed under the absolute control of fully-qualified medical practitioners." The congress was held within two miles of the Jones homes. The advocates or partisans of these institutions, if such exist, might have made themselves heard. Not a word in their defence was uttered. Nothing could be more conclusive. No better qualified and no more emphatic condemnation could have been uttered. There were members of the congress coming from all parts of the country who had studied the subject of sanatoriums for the treatment of tuberculosis both at home and abroad and there were others who, living at Folkestone or Sandgate, knew all about the local circumstances. It is from such an assembly as this that an emphatic and unanimous pronouncement has been obtained, and not a voice was heard, not a word was uttered, in defence of the Jones homes. What, it may well be asked, will be done in response to so striking a demonstration? The Local Government Board can surely no longer affect to ignore the question. The county council of the district must now feel that it is bound to exercise its powers to the uttermost, while the nation at large will awaken to the fact that, though foremost in so many matters of sanitary reform, England is behind several European countries in regard to sanatoriums for the treatment of tuberculosis. The Poor-law Guardians are said to spend £1,000,000 per annum merely for the treatment of this disease and yet some among them still send sufferers to the Jones homes. The debate at the Folkestone Congress has shown that something better than this can and must be done. Perhaps after all the Sandgate scandal will ultimately prove to have been a blessing in disguise, for it has forced the general question of popular sanatoriums for the treatment of tuberculous patients upon the public attention. After the pronouncement made by the Royal Institute of Public Health at the Folkestone Congress the whole problem must be taken seriously in hand.

Looking Back.

FROM

THE LANCET, *SATURDAY*, AUGUST 12, 1826

FOREIGN DEPARTMENT.

On the Traffic with Leeches. By Dr. Kunzmann of Berlin. (Hufeland's Journal der Pract. Heilkunde, March, 1826.)

The increased demand for leeches during the last 20 years, and the scarcity of them in France, America, and particularly in England, compared with the abundance of these creatures in Germany, Silesia, and Poland, has gradually given rise to a trade with these animals, which is much greater than one would at first sight be inclined to believe. How profitable this trade must be, may be learned from this fact; that Apothecaries in Paris and London find it to their advantage to send men from these towns to procure or cause to be procured these animals for their use, and to convey them to these capitals. This, however, is less remarkable when we consider that in the year 1819, the expense for leeches alone in the Parisian hospitals was 4,800 sterling. In the year 1823 it was nearly 7000 guineas. According to Sarlandiere the yearly sum paid for these animals, for the hospitals in France, is upwards of *one million and a half of francs*, or in English money £60,000! Not less than *seven million two hundred thousand of these animals* are annually sent to England. The merchants buy them in summer for 12 rix dollars (36 shillings) a thousand; in winter they pay 30 to 45 dollars; a price which they can very well afford to give, for according to Boehr's statement, a shilling or eighteen pence will be sometimes paid a piece in the shops of London.

The mode that the leech merchants transport the animals is different. Some make use of wooden vessels, which have been carefully cleaned with boiling water, and which must have contained neither salt, nor tobacco, nor the like. In this vessel from 2 to 3000 are placed without water. In 36 hours afterwards, and just before they are put into the waggon, one fourth part of the vessel is filled with water.

As the young animals attack the old, care is taken by the merchants not to put these two together. When the journey is not above eight days, the animals in general live, but if the period of their transportation exceeds that, the greater part of them will die. The mortality is still greater when the weather is warm, or there has been thunder.

Another set of people, particularly the French merchants, transport these animals in a linen bag, which has been well washed, without soap, however, and in order to avoid the bad consequences of shaking during the transportation, they carry them. When thunder comes on they thrust bag and leeches into any marsh they find on the way, but not in a running stream. When the place is at no great distance, they put into one bag as many as it can hold. The better way seems, however, to be that we have already adverted to, transporting them in small numbers in bags.

The great object of the above statement respecting the quantities of leeches used, is to show the probable danger there exists of the supplies of these animals being soon exhausted, and to propose measures to be taken to prevent such a dreadful event. The alarm, however, is unfounded; and if it were not, the plan proposed of bringing them all together in one large marsh, or in places constructed for them, would be much more likely to create a dearth of these animals sooner than double the present consumption.

Public Health and Poor Law.

LOCAL GOVERNMENT BOARD.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

South Shields County Borough.—Dr. J. J. Boyd draws attention to the absence of powers for the inspection of coal mines on the part of the sanitary staff, and he suggests that owing to the lack of sanitary supervision coal mines may be instrumental in promoting the spread of enteric fever. During 1903 30 per cent. of the wage-earning males who were affected with enteric fever in South Shields were employed in coal mines, whereas only 8 per cent. of the male population over 15 years of age are thus engaged. These facts show, Dr. Boyd thinks, an undue incidence of the disease in miners. He has also noted instances of apparent personal infection among those working on the same "shift" in a mine. This is a subject well worth further study. As a rule there are, we believe, no provisions made for the disposal of excreta and each miner selects the most convenient spot for the purpose, there being, however, an understanding that no spot immediately to the windward of the gang shall be [illegible] r. Boyd suggests, the recent [illegible] ankylostomiasis in our mines [illegible] y proper precautions should be taken.

Borough of Blackpool.—Dr. F. J. H. Coutts regrets the fact that many cases of pulmonary tuberculosis which are sent to Blackpool for the purpose of treatment are not in a stage of the disease for which this somewhat invigorating climate is suitable. Early cases of the disease in which there is no rapid breaking-down of lung tissue and where the general condition is good often do well in Blackpool but patients who are unable to stand the strong winds go rapidly to the bad. It is to be hoped that the medical practitioners who are in the habit of sending unsuitable cases may be warned by Dr. Coutts, as this indiscriminate treatment of all stages of pulmonary tuberculosis is much to be deplored on professional as well as humanitarian grounds. There was in Blackpool, as in the country as a whole, a slight incidence of enteric fever during 1903 and, in so far as Blackpool is concerned, Dr. Coutts is inclined to ascribe part of the reduction to the "oyster scare" which operated partly in preventing the eating of oysters and partly by making oyster merchants more careful as to the source from which their wares were procured. Moreover, in Blackpool the mussels which formerly were potent for harm have been stripped from the sewer outfall pipes and from the piers and taken out to sea. Unfortunately the cockles and mussels sold in Blackpool are procured from other sources which, judging by results, are by no means free from the risks of specific contamination. We shall all agree with Dr. Coutts in his desire that shell-fish should be under better control. Watercress also appears to have spread enteric fever during 1903 and there is no doubt that this is another raw food which requires more control.

Borough of Macclesfield.—The education committee of this borough has appointed Mr. J. Hedley Marsh, the medical officer of health of Macclesfield, to be its medical officer and a detailed survey of the schools and of their sanitary condition has already been made. In four out of the 16 schools privy-middens still exist. The medical officer is now engaged in an examination of the physical and mental conditions of the children with a view to ascertain *inter alia* whether any of the children are suffering from want of food or from injudicious feeding. As regards physica[illegible] ve been done already in Mac[illegible] the Macclesfield Patriotic [illegible] e years past instituted a sys[illegible] sical training.

Southall-Norwood Urban District.—In discussing the question of infantile mortality Dr. J. D. Windle expresses doubt as to the expediency of promoting a supply of sterilised milk. *Clean* milk does not, he thinks, require sterilising and he regards it as beginning at the wrong end to allow milk to get into such a condition that it needs sterilising. Such milk engenders, in his view, a false sense of security in that it only remains sterile "so long as it is stored with the strictest precautions against contamination." Here Dr. Windle hardly does justice to milk sterilised in bottles, as such milk if unopened will remain good for years. But notwithstanding this, there is much to be said for the view that a supply of fresh, pure, uncontaminated milk is the great desideratum of the present day. Both chemical preservatives and sterilisation tend in some degree to lead to carelessness in the matter of cleanliness and there are certain drawbacks to both methods of preservation, especially the former. All chemical preservatives in milk should, in our view, be absolutely prohibited. Dr. Windle thinks that it will be many years before the present Dairies, Cowsheds, and Milkshops Order provides us with pure milk and here we agree with him. Moreover, we are not indisposed to follow him in his somewhat heroic proposal for the establishment of municipal cowsheds and dairies, by which he understands "places where the housing of the cattle and the milking, collection, and distribution of milk for the purpose of infant feeding only would be carried out on scientific principles under official supervision, each dairyman paying his proportionate rent for the use of the premises." The idea is excellent but Dr. Windle goes perhaps somewhat beyond the bounds of discretion when he suggests that it should be illegal to sell milk for infant food from any other source. To place such a premium upon the milk of any given institution would be to destroy the private industry and a step such as this would invoke the hostility of the whole trade. Dr. Windle cannot have had much experience of legislative difficulties or he would content himself for the present with the establishment of the suggested models, leaving it to time to develop the idea.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 7740 births and 5785 deaths were registered during the week ending August 6th. The annual rate of mortality in these towns, which had been 13·7, 14·1, and 16·4 per 1000 in the three preceding weeks, further rose last week to 19·8 per 1000. In London the death-rate was 19·6 per 1000, while it averaged 19·8 per 1000 in the 75 other large towns. The lowest death-rates in these towns were 6·5 in Southampton, 7·7 in Smethwick, 9·8 in West Hartlepool, 10·1 in Grimsby, 10·2 in King's Norton, 10·8 in Croydon, and 10·9 in Hornsey; while the highest rates were 26·3 in Stockport, 26·8 in Birkenhead, 30·7 in West Ham, 32·1 in Bootle, 33·6 in St. Helens, and 37·6 in Liverpool. The 5785 deaths in these towns last week included 2058 which were referred to the principal infectious diseases, against 506, 792, and 1255 in the three preceding weeks; of these 2058 deaths, 1750 resulted from diarrhœa, 118 from measles, 95 from whooping-cough, 46 from diphtheria, 20 from scarlet fever, 22 from "fever" (principally enteric), and seven from small-pox. No death from any of these diseases was registered last week in Hastings, in Tynemouth, or in West Hartlepool; while the highest death-rates from the principal infectious diseases were recorded in St. Helens, East Ham, Walthamstow, Birkenhead, Stockport, Aston Manor, West Ham, Bootle, and Liverpool. The greatest proportional mortality from measles occurred in Bradford, Rhondda, Birkenhead, Hull, and Bootle; from diphtheria in Bradford and Halifax; and from diarrhœa in Walthamstow, Bootle, St. Helens, East Ham, Stockport, West Ham, Aston Manor, and Liverpool. The mortality from scarlet fever, whooping-cough, and "fever" showed no marked excess in any the large towns. Of the seven fatal cases of small-pox, two belonged to Stockport, and one each to Gateshead, Liverpool, London, Manchester, and Warrington. The number of small-pox patients in the Metropolitan Asylums hospitals at the end of last week was 32, against 62, 51, and 46 at the end of the three preceding weeks; two new cases were admitted during the week, against seven, six, and seven in the three preceding weeks. The numbers of scarlet fever cases in these hospitals and in the London Fever Hospital, which had been 1698, 1754, and 1784 on the three preceding Saturdays, declined again to 1758 on Saturday last, August 6th; 166 new cases were admitted during the week, against 229, 234, and 243 in the three preceding weeks. The deaths in London referred to pneumonia and diseases of the respiratory system, which had been 155, 120, and 118 in the three preceding weeks, further fell last week to 112, but were five above the number in the corresponding period of last year. The causes of 48, or 0·8 per cent., of the deaths registered in the 76 towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Leicester, Salford, Bradford, Leeds, Sheffield, Hull, Newcastle-upon-Tyne, and in 52 other smaller towns; while the largest proportions of uncertified deaths were registered in Handsworth, Middlesbrough, Barrow-in-Furness, and South Shields.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been 14·8, 15·7 and 14·1 per 1000 in the three preceding weeks, rose again to 14·6 per 1000 during the week ending August 6th, and was 5·2 per 1000 below the mean rate during the same period in the 76 large English towns. The rates in the eight Scotch towns ranged from 9·1 in Leith and 11·8 in Paisley to 15·3 in Dundee and 23·1 in Perth. The 483 deaths in these towns included 48 from diarrhœa, 26 from whooping-cough, five from measles, three from "fever," two from diphtheria, and one from scarlet fever. In all, 85 deaths resulted from these principal epidemic diseases last week, against 53, 68, and 58 in the three preceding weeks. These deaths were equal to an annual rate of 2·6 per 1000, which was 4·4 per 1000 below the mean rate last week from the same diseases in the 76 large English towns. The fatal cases of diarrhœa, which had been 19, 23, and 24 in the three preceding weeks, further rose last week to 48; 32 occurred in Glasgow, four in Edinburgh, four in Dundee, and four in Aberdeen. The deaths from whooping-cough, which had been 22, 21, and 19 in the three preceding weeks, rose again last week to 26, of which 15 occurred in Glasgow, four in Paisley, and three in Edinburgh. The deaths from measles, which had been six, 12, and seven in the three preceding weeks, fell last week to five; two of these occurred in Greenock. The fatal cases of "fever," which had been three, three, and four in the three preceding weeks, were three last week. The deaths from diphtheria, which had been two, three, and two in the three preceding weeks, were again two during the week under notice. The deaths from scarlet fever, which had been two, three, and two in the three preceding weeks, fell to one last week. The deaths referred to diseases of the respiratory organs in these towns, which had been 49, 75, and 55 in the three preceding weeks, fell last week to 47, and were seven below the number in the corresponding week of last year. The causes of 17, or more than 3 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 19·3, 17·5, and 17·9 per 1000 in the three preceding weeks, further rose to 21·2 per 1000 during the week ending August 6th. During the past four weeks the death-rate has averaged 19·0 per 1000, the rates during the same period being 15·8 in London and 13·8 in Edinburgh. The 154 deaths of persons belonging to Dublin registered during the week under notice showed an increase of 24 over the number in the preceding week and included 25 which were referred to the principal infectious diseases, against 18, 15, and 12 in the three preceding weeks; of these, 15 resulted from diarrhœa, four from whooping-cough, three from measles, two from diphtheria, and one from scarlet fever, but not any from small-pox or "fever." The 25 deaths were equal to an annual rate of 3·4 per 1000, the death-rates last week from the principal infectious diseases being 7·1 in London and 1·7 in Edinburgh. The fatal cases of diarrhœa, which had been two, five, and four in the three preceding weeks, rose last week to 15. The deaths from measles, which had been ten, five, and four in the three preceding weeks, declined to three last week. The fatal cases of whooping-cough, which had been three, three, and two in the three preceding weeks, rose last week to four. Diphtheria caused two deaths last week against one in the preceding week. The 154 deaths in Dublin last week included 43 among children under one year of age and 37 among persons aged 60 years and upwards, each of these numbers showing a considerable increase. Five inquest cases and two deaths from violence were registered; and 48, or over 31 per cent., of the deaths occurred in public institutions. The causes of ten, or more than 6 per cent., of the deaths registered in Dublin last week were not certified.

VITAL STATISTICS OF LONDON DURING JULY, 1904.

IN the accompanying table will be found summarised complete statistics relating to sickness and mortality in the City of London and in each of the metropolitan boroughs. With regard to the notified cases of infectious diseases it appears that the number of persons reported to be suffering from one or other of the nine diseases specified in the table was equal to an annual rate of 6·1 per 1000 of the population, estimated at 4,648,950 persons in the middle of the year. In the three preceding months the rates had been 5·1, 5·9, and 5·4 per 1000. The rates were considerably below the average in Paddington, Chelsea, the City of Westminster, Hampstead, Stoke Newington, the City of London, and Greenwich; while they showed the largest excess in St. Pancras, Shoreditch, Bethnal Green, Stepney, and Bermondsey. The prevalence of small-pox during July showed a marked decline from that recorded in the preceding month; among the various metropolitan boroughs the greatest proportional prevalence of this disease occurred in Finsbury, Shoreditch, Bethnal Green, Stepney, and Camberwell. The Metropolitan Asylums hospitals contained 46 small-pox patients at the end of last month, against 104, 118, and 74 at the end of the three preceding months; the weekly admissions averaged eight, against 24, 23, and 13 in the three preceding months. Scarlet fever was more prevalent last month than it had been during June; this disease was proportionally most prevalent in St. Pancras, Islington, Hackney, Bethnal Green, Stepney, and Woolwich. The number of scarlet fever patients in the Metropolitan Asylums hospitals, which had been 1515, 1632, and 1599 at the end of the three preceding months, rose to 1764 at the end of last month; the weekly admissions averaged 241, against 173, 219, and 206 in the three preceding months. The prevalence of diphtheria last month showed a marked increase over that recorded in the preceding month; among the various metropolitan boroughs the greatest proportional prevalence of this disease occurred in Fulham, the City of London, Bethnal Green, Stepney, Poplar, and Deptford. The Metropolitan Asylums hospitals contained 763 diphtheria patients at the end of last month, against 718, 755, and 681 at the end of the three preceding months; the weekly admissions averaged 124, against 97, 113, and 95 in the three preceding months. The prevalence of enteric fever last month showed a small increase over that recorded in the preceding month; this disease was proportionately most prevalent in Hackney, Finsbury, Stepney, Southwark, Bermondsey, and Greenwich. The Metropolitan Asylums hospitals contained 67 enteric fever patients at the end of last month, against 62, 51, and 62 at the end of the three preceding months; the weekly admissions averaged 15, against nine, ten, and 12 in the three preceding months. Erysipelas was proportionately most prevalent in St. Marylebone, Shoreditch, Bethnal Green, Stepney, Southwark, and Bermondsey. The 20 cases of puerperal fever notified during the month included five in Southwark, two in Kensington, two in Battersea, and two in Wandsworth.

The mortality statistics in the table relate to the deaths of persons actually belonging to the various metropolitan boroughs, the deaths occurring in public institutions having been distributed among the several boroughs in which the deceased persons had previously resided. During the four weeks ending July 30th the deaths of 4856 persons belonging to London were registered, equal to an annual rate of 13·6 per 1000; in the three preceding months the rates had been 16·2, 13·9, and 12·5 per 1000. The lowest death-rates in London last month were 6·7 in the City of London, 7·2 in Lewisham, 8·6 in Hampstead, 10·2 in Wandsworth, and 11·2 in Greenwich; while the highest rates were 15·8 in Bermondsey, 16·0 in Holborn, 17·2 in Stepney, 17·7 in Poplar, 20·3 in Shoreditch, and 20·9 in Finsbury. The 4856 deaths from all causes in London last month included 900 which were referred to the principal infectious diseases; of these, three resulted from small-pox, 177 from measles, 28 from scarlet fever, 33 from diphtheria, 90 from whooping-cough, 16 from enteric fever, and 553 from diarrhœa. The lowest death-rates from these diseases were recorded in Paddington, the City of Westminster, Hampstead,

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING JULY, 1904.

(*Specially compiled for* THE LANCET.)

CITIES AND BOROUGHS.	Estimated population in the middle of 1904.	NOTIFIED CASES OF INFECTIOUS DISEASE.											DEATHS FROM PRINCIPAL INFECTIOUS DISEASES.											Deaths from all causes.	Death-rate per 1000 living.	Deaths of infants under one year to 1000 births.
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cholera.	Total.	Annual rate per 1000 persons living.	Small pox.	Measles.	Scarlet fever.	Diphtheria.*	Whooping-cough.	Typhus fever.	Enteric fever.	Other continued fevers.	Diarrhœa.	Total.	Annual rate per 1000 persons living.			
LONDON...	4,648,950	32	1104	559	—	109	2	20	344	—	2170	6·1	3	177	28	33	90	—	16	—	553	900	2·5	4856	13·6	140
West Districts.																										
Paddington	146,975	—	23	13	—	3	—	—	4	—	43	3·8	—	—	—	1	1	—	—	—	14	16	1·4	136	12·1	121
Kensington	179,236	—	27	16	—	2	1	2	7	—	55	4·0	—	2	—	2	1	—	1	—	16	22	1·6	163	11·9	134
Hammersmith	117,412	—	12	19	—	3	—	—	6	—	40	4·4	—	—	—	2	3	—	—	—	20	25	2·8	105	11·7	127
Fulham	152,482	—	14	33	—	—	—	1	11	—	59	5·0	—	5	—	1	2	—	—	—	23	31	2·7	152	13·0	137
Chelsea	74,329	—	4	2	—	1	—	—	6	—	13	2·3	—	3	—	—	—	—	—	—	6	9	1·6	70	12·3	149
City of Westminster	177,321	1	24	11	—	5	—	—	10	—	51	3·7	—	2	1	—	—	—	3	—	13	19	1·4	158	11·6	129
North Districts.																										
St. Marylebone	130,337	1	22	12	—	1	—	—	26	—	62	6·2	—	2	2	—	1	—	—	—	19	24	2·4	134	13·4	109
Hampstead	86,663	—	9	4	—	—	1	—	1	—	15	2·3	—	—	1	—	—	—	—	—	5	6	0·9	57	8·6	101
St. Pancras	235,936	1	104	22	—	3	—	1	17	—	148	8·2	—	6	1	—	9	—	2	—	13	31	1·7	270	14·9	153
Islington	341,044	—	123	14	—	8	—	—	18	—	163	6·2	—	30	1	—	6	—	—	—	11	48	1·8	335	12·8	129
Stoke Newington	52,445	—	6	3	—	1	—	1	3	—	14	3·5	—	2	—	—	2	—	—	—	1	5	1·2	49	12·2	89
Hackney	226,266	1	69	35	—	10	—	1	14	—	130	7·5	—	8	1	4	5	—	2	—	34	54	3·1	234	13·5	152
Central Districts.																										
Holborn	57,161	1	12	1	—	1	—	—	3	—	18	4·1	—	3	—	1	2	—	—	—	3	9	2·1	70	16·0	103
Finsbury	98,958	7	28	9	—	3	—	—	3	—	50	6·6	2	7	1	—	3	—	1	—	12	26	3·4	159	20·9	145
City of London	23,482	—	—	5	—	1	—	—	—	—	6	3·3	—	—	—	1	—	—	—	—	—	1	0·6	12	6·7	83
East Districts.																										
Shoreditch	117,033	7	29	22	—	3	—	—	13	—	74	8·2	—	5	3	2	4	—	—	—	38	52	5·8	182	20·3	273
Bethnal Green	130,207	5	71	32	—	4	—	—	15	—	127	12·7	1	15	2	3	5	—	1	—	17	44	4·4	137	13·7	127
Stepney	303,791	4	104	76	—	12	—	1	39	—	236	10·1	—	8	1	6	3	—	2	—	68	88	3·8	401	17·2	167
Poplar	169,905	—	34	41	—	1	—	1	11	—	88	6·8	—	5	3	4	5	—	—	—	39	56	4·3	231	17·7	159
South Districts.																										
Southwark	207,937	—	37	27	—	8	—	5	31	—	108	6·8	—	5	—	—	4	—	—	—	37	46	2·9	245	15·4	144
Bermondsey	129,397	—	35	22	—	5	—	1	16	—	79	8·0	—	9	2	1	2	—	—	—	22	36	3·6	157	15·8	167
Lambeth	310,359	—	50	24	—	8	—	1	13	-	96	4·0	—	22	1	1	9	—	1	—	44	78	3·3	335	14·1	156
Battersea	175,465	—	31	20	—	2	—	2	13	—	68	5·1	—	2	3	—	3	—	—	—	17	25	1·9	177	13·2	109
Wandsworth	257,448	—	39	28	—	5	—	2	21	—	95	4·8	—	5	1	2	6	—	1	—	22	37	1·9	202	10·2	126
Camberwell	263,384	4	80	24	—	8	—	—	22	—	138	6·7	—	8	3	1	5	—	1	—	19	37	1·8	267	13·0	122
Deptford	113,509	—	31	24	—	1	—	1	7	—	64	7·3	—	13	—	1	1	—	—	—	7	22	2·5	134	15·4	111
Greenwich	101,651	—	10	7	—	5	—	—	3	—	25	3·2	—	9	—	—	3	—	1	—	9	22	2·8	87	11·2	108
Lewisham	140,401	—	31	6	—	2	—	—	4	—	43	4·0	—	—	—	—	1	—	—	—	5	6	0·6	78	7·2	70
Woolwich...	123,416	—	45	7	—	3	—	—	7	—	62	6·5	—	1	1	—	4	—	—	—	19	25	2·6	119	12·6	145
Port of London	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

* Including membranous croup.

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H. W. Russell	530	H. C. Sidgwick	482
G. R. Painton	523	J. St. A. Maughan	477

49 candidates entered and 14 of those who passed possessed university degrees.

Indian Medical Service Examination

The undermentioned gentlemen were successful at the Indian Medical Service examination held on August 1st and four following days —

Names	Marks	Names	Marks
H S Matson.	3543	J M Macrie	3181
D Steel	3319	C C C Shaw)	3060
F H Stewart	3223	R D McGregor	2981
H N Dougan	3277	J W H Babington	2979
R T Wells	3215	F B Shettle	2957
A H Proctor	3195	N S M Peebles	2923
A Cameron	3191		

Of 43 who entered 33 (21 of whom had university degrees) competed for the 13 vacancies

The War in the Far East

The principal matter connected with the war in the Far East which is at the present time absorbing attention in political circles in this country is not so much the progress of the campaign as the object and motives underlying Russia's action with regard to her volunteer fleet and the possible result of that action as regards ourselves The question which many people are putting to themselves is this Whether Russia is seeking to bring about a rupture *with this and another country to save her loss of prestige in* the event of her having to withdraw from Manchuria and confess herself defeated by Japan ?

Be that as it may there is a comparative lull in the war news at the present time—the issue of the campaign still hangs in the balance the decisive battle so often spoken of as imminent with Kuropatkin's forces has still to come off, and Port Arthur yet holds out The weather at the seat of war has for this season been exceptionally dry and hot, the heat having vastly increased the labour and fatigue of the troops in the field and given rise to a good deal of sunstroke and heat exhaustion The Russian soldiers have been heavily pressed by frequent fights and dispirited by numerous defeats and retreats It need scarcely be said that troops habitually finding themselves numerically inferior to their enemy and frequently having to yield positions because of their being capable of being turned are very apt to lose their nerve But it is in such circumstances that the stolid fortitude and obduracy of the Russian soldier show to the greatest advantage and never more so perhaps than has been the case in the present war We may set aside the enormous estimated losses on the part of the Japanese in their assaults on Port Arthur as at least *untrustworthy exaggerations but there can be no doubt that* their losses on these occasions have been considerable and that the capture of Port Arthur has proved, and is still proving a much more difficult undertaking than has been generally represented The advent of heavy, rains which if delayed must nevertheless occur and the delay which has taken place on the part of the Japanese armies in attacking the Russians and cutting off their line of communication with their base, are all in favour of the latter In the retreat of the Russians from Haicheng the wounded in the fight of July 31st were quickly placed in the hospital train and the Red Cross Society is said to have displayed great rapidity in dealing with them Many of the unfortunate soldiers were terribly wounded by shrapnel

The statistical calculations which have appeared in Russia regarding the casualties from wounds and sickness in General Kuropatkin's armies are not to be relied on but so far as they go they do not indicate anything exceptional in the circumstances There seems to be a very disproportionate rate of sickness and mortality among the officers as compared with the men of the Russian army probably attributable to the fact that the mode of life and training of the men render them better fitted to endure the privation and hardships of campaigning The sick are mostly suffering from dysentery After the beginning of the rains (from June 13th) the proportion of wounded and especially of sick casualties greatly increased The *Journal*

' month contains an

ices in the Russian

R A.M C (retired)

The *Novosti*, in an article entitled The War Doctors and Jews, insists on the necessity of cancelling at all events for a time the rule restricting the admission of Jews to medical education It points out the valuable services the Jewish medical men have rendered on the battlefield *and states further that* at a time *when the number of Jews* accepted for the medical faculty in the universities does not exceed from 3 to 10 per cent , and is reduced to *nil* in the Military Medical School, we find that in Kharbin alone there are 45 Jewish military medical men and that these constitute over 50 per cent of all the medical men to be found there The population of Russia is sorely in want of all kinds of medical assistance, be it by Russian, German, Jew, Buriatt, or other , therefore it is not in the interest of the people to limit the supply As to keeping in Russian hands the practice that would otherwise fall into the hands of the Jews it has been clearly shown that although the medical career is wide open to Christians these quite fail to satisfy the wants of the immense Russian population The medical profession should be thrown open to all, and even then *many years will be necessary to educate the required* number Such a step is requisite to inculcate suitable ideas of hygiene amongst the Russian masses, who are at the mercy of quacks and pretenders to mystic knowledge and sorcery and, on the other hand there is really no valid reason for hindering such a development

Correspondence.

Audi alteram partem

THE BISHOP OF LONDON'S URGENT APPEAL ON BEHALF OF HIS DIOCESAN BOYS' CAMPS

To the Editors of THE LANCET

SIRS —I hope that the numerous appeals which I have been obliged to address to the public this summer will not prejudice the one which I now make on behalf of our London boys I am writing this surrounded *by 300* happy boys, some bathing some playing cricket, others acting as sentry and guarding the camp and all trained and invigorated by a week at the seaside and the healthy activities of camp life These boys return to morrow morning to be succeeded by 600 more, who will arrive for their week in the afternoon

It would be impossible to imagine a more ideal holiday for boys after the confinement and monotony of their work in London, but although the boys all pay according to their wages, towards their outing a large sum is required for tents, the railway fares and the catering for so large a number and *for the first* time for 15 years we are face to face with a serious deficit I hope that I shall not appeal in vain for so successful and necessary a work Cheques should be sent to Mr F Abel Bloxam 23 Northumberland avenue, Charing Cross

I am Sirs yours faithfully,
A F LONDON

London Diocesan Seaside Camp for Working Lads,
Bexhill July 30th

NATIONAL LEAGUE FOR PHYSICAL EDUCATION AND IMPROVEMENT

To the Editors of THE LANCET

SIRS —In a leading article in THE LANCET of Jan 31st, 1903 p 315 you pointed out that the unfitness for military service to which Sir Frederick Maurice had called attention was not the condition of the population at large but only of a certain section of it In a letter to THE LANCET of Feb 14th 1903, p 471, I mentioned the fact that records were being constantly broken as supporting your position and as showing that the physique of some classes was improving rather than deteriorating At the same time I suggested the appointment of a commission to obtain information as to (1) the causes of physical deficiency (2) the best means of remedying the defects and (3) the best means at present available in case that the best means possible cannot as yet be applied ' In April, 1903, Sir William Taylor, Director General of the Army Medical Department, prepared a memorandum of the unfitness of a large proportion of the young men of this country for military service This memorandum led to the appointment of an Interdepartmental Committee on Physical Deterioration This name as Sir William Taylor remarks (Report of the Commission pp 2 and 100) is to be regretted, for it implies a comparison between the past and the present, and as no data exist for such a comparison it is impossible to come to any

Stoke Newington, the City of London, and Lewisham; and the highest rates in Finsbury, Shoreditch, Bethnal Green, Stepney, Poplar, and Bermondsey. Of the three fatal cases of small-pox registered last month, two belonged to Finsbury, and one to Bethnal Green. The 177 deaths from measles were 14 below the average number in the corresponding period of the ten preceding years; among the various metropolitan boroughs this disease was proportionately most fatal in Islington, Finsbury, Bethnal Green, Bermondsey, Lambeth, Deptford, and Greenwich. The 28 fatal cases of scarlet fever were 24 below the corrected average number; the greatest proportional fatality from this disease occurred in St. Marylebone, Shoreditch, Bethnal Green, Poplar, Bermondsey, and Battersea. The deaths from diphtheria numbered 33 last month, the average number in the corresponding periods of the ten preceding years having been 137; among the various metropolitan boroughs this disease was proportionately most fatal in Hammersmith, Hackney, Shoreditch, Bethnal Green, Stepney, and Poplar. The 90 fatal cases of whooping-cough showed a decline of 49 from the corrected average number; the greatest proportional mortality from this disease occurred in St. Pancras, Finsbury, Shoreditch, Bethnal Green, Poplar, Lambeth, Greenwich, and Woolwich. The 16 deaths from enteric fever were 17 below the average number in the corresponding periods of the ten preceding years. The 553 fatal cases of diarrhœa were 81 below the corrected average number; this disease showed the highest proportional mortality in Hammersmith, Shoreditch, Stepney, Poplar, Southwark, Bermondsey, and Woolwich. In conclusion, it may be stated that the aggregate mortality in London last month from the principal infectious diseases was over 24 per cent. below the average.

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and standard memoirs to considerable advantage, for anything in the nature of malice was far from the minds of those ideal hosts of the old school.

Sir John Simon sprang from a good French *émigré* stock that had taken to commerce in London and he was sent into the medical profession as so many of his neighbours were sent by merchant fathers too timid to venture to give their sons a university education and *yet unwilling to bring all their boys up to the counting* house. As long ago as 1833 he began the study of medicine under the famous Joseph Henry Green of St. Thomas's Hospital. The elder Greens and Simons both belonged to the City, but Joseph Henry Green, born on London Wall in 1791, was an idealist, as it were, escaping from mercantile associations, and young Simon was from the first strongly influenced by his tall, languid, dreamy master. Green was the intimate friend of Samuel Taylor Coleridge, who ended his opiated career in the house of Mr. Gillman, the Highgate surgeon, and was known also to Wordsworth. Simon in his "Private Recollections" tells with enthusiasm of a morning spent, by Green's introduction, with William Wordsworth, who read to him a sonnet. Simon and his fellow pupil and [illegible] the medical students of that far off day certainly furnished the then youthful Charles Dickens with the models for Bob Sawyer and Richard Allen. In the homes of their staid Puritanical elders the medical students of the "thirties" were apt to be regarded as savages—medicine men dealing in human bones and addicted to body-snatching and the abuse of tobacco. Quite lately Sir John Simon humorously confessed that in the house of my maternal grandfather he had been relegated to side doors and back stairs and rooms specially set apart. Such treatment implied no specific insult and no offence was taken by the young men themselves, but it is certain that Simon though he might have had the tobacco habit, in no other way resembled the medical students of Dickens or Albert Smith. These details of student life are trivial enough but now that Mr. Edmund Image, Mr. John Birkett, and Sir John Simon, the three senior *Fellows of the Royal College of Surgeons* have all passed away within a year we shall hear them from few, if any, living lips.

Simon's general culture advanced apace. He travelled extensively in the home countries of Europe and at an early date became familiar with many notabilities in France and Germany. He spent a day with Liebig as he had spent one with Wordsworth. In Berlin in 1841 he enjoyed the conversation of Ludwig Tieck and his brother the sculptor, of Rauch the sculptor, Waagen the art curator, and so forth. At Dresden he visited Retsch, the illustrator of "Faust," and at Munich discussed philosophy with the great Schelling. He expresses his pleasure at having seen and heard Felix Mendelssohn in London. He paid no visit anywhere, in fact without gaining an insight into all that was best in the artistic and literary life of the place *visited*. Yet he never forgot his own proper business of science, for at an early age he made the acquaintance in his travels of Vrolik, Schröder von der Kolk, Flourens, Tiedemann and Henle and continued throughout life this custom of adding to his circle of friends all that was most *eminent* in the surgical and *medical* science of Europe and America.

We must not forget to mention two studies which if pursued might have led astray from science one whose leanings were essentially literary. When Simon was giving *anatomical demonstrations in the then very insanitary* dissecting [illegible] during mon[illegible] particularly [illegible] strongly to [illegible] of esoteric wisdom. Simon with medical friends and others formed themselves into a society for the study of German metaphysics. What he drew thence it is hard to imagine—certainly not the pellucid literary style in which his famous "Reports," his treatises, his polemical letters to the *Times*, and his numerous articles are so happily couched. He aimed, as we know from himself, at clearness, at perfect lucidity, the perfect expression of the thought in his mind, for beauties of style as such he cared naught. Yet Simon's balanced old world style is beautiful and remains a monument of English at its best. The style was, indeed, the man and it is scarcely paradoxical to say that without it Simon would not have been the great hygienic and social reformer that he was. With it, incidentally, he made sanitary reform a branch of English literature. There are certain passages in Simon's "Sanitary Institutions," a book that deserves to be read side by side with his friend Buckle's [illegible]" on which any student of English [illegible]ief among these is the whole grand [illegible] Francis of Assisi and the Franciscan Order, which begins on page 49 of the "Introduction."

I am, Sirs, yours faithfully,

Victor G. Plarr,

Librarian of the Royal College of Surgeons of England.

August 2nd, 1904.

THE USE OF PHENYLHYDRAZIN IN THE CLINICAL EXAMINATION OF URINE.

To the Editors of The Lancet.

Sirs,—It is with much interest and not a little regret that I have read in The Lancet of July 23rd, p. 211, Dr. W. H. Willcox's article on the above subject. My object in replying is simply to uphold the delicacy and accuracy of the test in question, for this is my sincere conviction—a conclusion arrived at after nearly seven years of patient labour. It would, indeed, be deplorable if some of your readers, influenced by Dr. Willcox's article, should be induced to abandon what has been proved one of the most reliable tests that we possess. No doubt some experience is necessary not only in the mode of its application but also in interpreting the results.

I will briefly endeavour to show that the attack on the merits of this method of identification of glucose in the urine has been made upon an erroneous basis—to wit: 1. The test as applied to the urine was originally proposed by Professor von Jaksch and was never intended to be used subsequent to hydrolysis of the urine by hydrochloric acid. 2. Dr. Willcox shows by his own experiments that normal urine when treated by the test in question does not yield characteristic crystals. 3. It is quite possible crystals were obtained from urine after hydrolysis with hydrochloric acid similar to those obtained from diabetic urine; but this is altering the condition of things. A test is only of value when applied under certain conditions. 4. Supposing the crystals obtained after hydrolysing the urine are similar in appearance to those obtained from diabetic urine, the melting point will not be the same unless the hydrolysis produces glucose from some as yet unknown substance or substances.

It follows, therefore, that the mere production of apparently identical, or even identical, crystals obtained under altered conditions does not in any way detract from the merits of the test. The experiments of Dr. Willcox are of much interest inasmuch as they show the possible existence of other substances in the urine not yet recognised.

I am, Sirs, yours faithfully,

A. F. Bilderbeck Gomess.

Drayton-gardens, S.W., July 31st, 1904.

THE PLAGUE IMMUNITY OF THE CITY OF MADRAS.

To the Editors of The Lancet.

Sirs,—In your leading article in the issue of June 18th, on the subject of "Immunity from Plague enjoyed by Shanghai," you remark that a similar immunity of Madras "is not understood." As this is not the first time that this subject has been referred to by professional papers it may be of interest to some of your readers to know what at least are certain of the factors concerned in bringing this protection about. I quite agree with you in thinking that there is nothing inherent in Madras to protect against this disease. Sanitary conditions and the death-rate which results therefrom are phenomenal. Before, however, I proceed to state why I consider the disease has been kept at bay I should like it to be understood that I am perfectly aware that, in dealing with a free population, no method of prevention is infallible. And even when recognising the merits of any special method it is necessary also to remember that in respect of plague as of any other infectious disease, it does not follow that, because one or more cases are introduced in a population, an epidemic *must* ensue. The conditions under which the morbific agent may be required to exhibit spread or duration of vitality may not be favourable, a small fact well worth remembering in fighting plague. The sanitarian may, with confidence, apply the principle that every chance of success is of solid advantage to him, and may remember that favouring accidents or chances affecting the disposal of infectious matter need not always be with the enemy.

When plague made itself felt in Hong-Kong in 1894 I issued a circular to port medical officers warning them of its possible entrance to this presidency. The moment it was ascertained that plague had entered Bombay, instead of adopting a system of quarantine and observation in camps I at once advised local bodies to employ passport surveillance of the type contemplated by the Local Government Board in England with reference to cholera. This was subsequently legalised by the Madras Government using the Epidemic Diseases Act; so that, by taking advantage of the revenue system of village organisation, every village and town in the area of 141,726 square miles of this presidency became a centre of sanitary action and surveillance. All persons proceeding from towns or villages "notified" as infected are required to take passports binding them to undergo surveillance during ten days in whatever localities they halt at. The first actual advent of plague in the city of Madras was in October, 1897, and although, as a matter of fact, in this first experience there was neglect of one day in surveillance which nearly led to a disaster, the tracing of cases was due to the existence of the passport system in its yet incomplete and non-legalised form. Since then, in the city of Madras 67 cases of imported plague have occurred, of which 59 have been directly, and the rest indirectly, detected under this system. Last year 79,488 passports were registered and only 2 per cent. of the holders were *not* traced. The trouble involved up to date to the municipal staff must have been great, but so far as one could perceive the result has been of enormous benefit to the 500,000 inhabitants of the city of Madras. Necessarily, the system is far from infallible. Irrespective of the possible arrival of infected material there must at times be evasions in the case of persons from infected areas who may or may not be incubating plague, the chances always, however, being heavily in favour of their not being infected, as shown by the large average number of cases that pass through the period of surveillance before a single case of plague is detected[1]—namely, 5000. Indeed, that the passport system has materially diminished without removing absolutely the chances of infection of the city is shown by the fact that in April this year Madras went through a small outbreak of indigenous plague, in all probability as a result of an evasion of the passport rules. The actual origin of infection was never ascertained, although the most reasonable hypothesis was the native rumour that the first death was in the case of a person who had been in the infected area of Bangalore and had evaded the passport rules on arrival. The suspicious death was fortunately reported by an anonymous petition to the medical officer of health who was able to warn in time the district medical officer in charge of a suburb beyond municipal limits to which certain of the contacts adjourned. The result was that the contacts were traced and on all the usual measures being applied to the infected localities the disease was stamped out, but not until 11 cases had occurred in the suburbs and five in the city of Madras. Luckily rats did not get infected. Not one of the cases was of the bubonic variety; they were toxic, pneumonic, and intestinal—showing, I think, that the Madras environment is capable of nurturing a very virulent strain of plague. The diagnosis of the last pneumonic case—a contact of a previous pneumonic case—was bacteriologically confirmed by Lieutenant-Colonel Bannerman, I.M.S., the then superintendent of the King Institute, Madras. As, then, you have remarked, there is nothing in the sanitary condition of Madras *per se* that has hitherto effected its protection. The chief factor in bringing about that result has been the activity of the municipal staff in keeping persons from infected areas under surveillance, aided by the passport system.

As a result of this method of fighting plague *from the commencement* of danger of importation numerous imported cases in hitherto uninfected areas have been detected in all parts of the presidency. Following prompt action by local officers in these cases no spread has taken place. Errors of judgment or breakdown of methods have led to indigenous plague in certain districts. But it has spread very slowly, and instead of there being widely scattered areas infected throughout the presidency [illegible] coalesce consequent upon the yielding [illegible] areas, the curious result has been seen of plague being confined to the districts bordering upon the great centre—namely, the Mysore Territory, whence the infection is constantly imported and where the repetition of chances is consequently greatest. Year after year a gradual addition to the numbers of these districts has occurred and an advance towards the central and southern districts is at the present time threatened. It can scarcely be hoped that Madras city will escape being indigenously infected, but in the meantime the struggle by Government and local authorities in this presidency has been well sustained and the result has been, I think, to earn a grade of protection of life and trade that would not have been feasible had plague been "let rip."

I am, Sirs, yours faithfully,

W. G. KING,

Madras, July 13th, 1904. Lieutenant-Colonel I.M.S.

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[1] In an indigenously infected district the examination of each 1600 passport holders arriving in uninfected areas secured one case of plague.—W. G. K.

LAYMEN AND ELECTRICAL TREATMENT.

To the Editors of THE LANCET.

SIRS,—In answer to Dr. E. Stanley Smith's letter in THE LANCET of August 6th, p. 423, I should like to bring before him the following considerations. First, the expense. I am sure that any medical man working at electro-therapeutics would willingly treat cases at whatever fee their medical adviser thought or knew they could afford. In suitable cases properly vouched for by their practitioner no fee for treatment in private would, I am sure, be charged. From what I know of the charges of my registered *confrères* I am of opinion that they would agree with me that, as a rule, skiagrams from £3 to £10 are the peculiar perquisite of the unregistered quack. I shall be pleased to send to any registered medical practitioner the list of the British Electro-Therapeutic Society, upwards of 200 medical men in London and the provinces, who would I am certain charge the fee that the medical attendant thought proper. Regarding the "absurdity of contending that there can be anything harmful to a patient in getting a layman to take a skiagraph," I would contend, Sirs, that it most assuredly depends on what the medical man wants. Does he want a picture? or Does he want to have skilled medical advice on the *interpretation of the skiagraph?*—things which, as you are well aware, are totally different in nature.

Again, we should be pleased to hear of the "layman," electro-therapeutic institute, &c., who, possessing a certain amount of elementary knowledge of anatomy, is still capable of knowing when to stop in treating any case with x rays, high-frequency, or any other form of electrical treatment. If this does not require a full medical training how is it that our hospital statistics are better than those of laymen or lay institutes? Why is it that the history of our hospital and, alas, often our private patients is very generally that they have tried this or that quack or quack institute and paid good fees before they come to us or our out-patient department for cure? This can be easily proved by a visit to any hospital with the requisite electrical department.

Secondly, regarding Dr. Smith's statement that "medical men shrink from sending their patients to another medical man owing to their diagnosis and treatment being overhauled by another," I would only ask the following question: Will the diagnosis and past treatment, good or bad, be upheld by a quack or quack institute rather than by one's own registered colleague?

Mr. H. Valentine Knaggs's letter in the same issue contains a somewhat alluring but dangerous suggestion. It is that medical practitioners who practise electro-therapeutics should *advertise* to obtain the support of some medical men and also to act as a foil to the numerous electrical quacks. This would entail de-registration. Does Mr. Knaggs seriously consider what this means to a duly registered medical practitioner? Would he give the same advice to the dermatologist, surgeon aurist, surgeon oculist, and laryngologist, or any other of our special practitioners? I venture to think, Sirs, that should we attempt to follow Mr. Knaggs's advice he would probably be the first to cast at us a stone.

Electro-therapeutics is recognised as a special branch of our art at all our large hospitals and most of the smaller ones and to all those who have carefully watched its development it comes somewhat as a surprise that any well-informed medical practitioner should for one moment be-little the assistance and help to medicine and surgery which the intelligent medical study of electro-therapeutics has already conferred.

I am, Sirs, yours faithfully,

Bedford square, W.C., August 8th, 1904. CHISHOLM WILLIAMS.

To the Editors of THE LANCET.

SIRS,—It is indeed sad to see how some members of the profession who love to pose as veritable models of light and leading in ethical matters, disregarding the General Medical Council's notice *re* "covering," still persist in countenancing unqualified practice by sending their patients to laymen for electrical treatment. The reasons suggested by Dr. E. *Stanley Smith in* THE LANCET *of August 6th, p. 423,* are at the best but poor and specious excuses for such [illegible] expense, squeamishness about [illegible] *ideas of treatment overhauled,* [illegible] knowledge of anatomy required [illegible] electricity.

A medical man who would rashly venture, on the score of expense, to send his patient to a "*skilled*" bone-setter, "*who has an elementary knowledge of anatomy.*" would, I fear, have a hard time [illegible] operative surgeons of his [illegible] principles. So likewise do [illegible] something other than "*abs*[illegible] *be anything harmful to a patient in getting a skilled layman to*" examine "*him* for diagnostic purposes." A correct diagnosis is the only sure basis of rational treatment. A patient who can afford to pay a fee of 30 to 100 guineas for a single operation can well spare an additional two or three guineas for an expert's opinion that will clinch the diagnosis in a doubtful case. Again, a skiagram is no more a measure of the exact value of a medical radiographer's services than a bottle of physic is of that of the [illegible] practitioner who dispenses. It is true that a certain [illegible] *of the public are imbued with this idea but, Heu pietas!* similar views are not held in professional circles. By those best fitted to express an opinion radioscopy rather than radiography is regarded as the surest guide to a correct diagnosis, although the latter has its uses for purposes of localisation and as confirmatory evidence in a court of law. It may easily be inferred from what has been already said that a skiagram is only a record of one phase of an examina- [illegible] mount of [illegible] a search [illegible] *ven more* experience is needed to tell which surface of the body or part was in immediate relation with the plate. This being the case, surely a labourer is worthy of his hire.

A great and wise physician has said, "We can learn a lot by our very mistakes, and none but a conceited ass would allow vanity to stand in the way of knowledge." Thank goodness, the profession at large are not to any extent afflicted with this troublous complaint, which spells death to consultations between medical men, whether specialists or general practitioners. How much reliance can be placed on "*the 'skilled' layman who has an elementary knowledge of anatomy*"? Is he likely to prove the superior of the average medical student in this respect? It cannot be too strongly emphasised that something more than a thorough acquaintance with the working of electrical apparatus and an elementary knowledge of anatomy is essential to success in electrotherapy. Experience that combin[illegible] the physiological and [illegible] and mastery of electrica[illegible] us in making a judicious selection c[illegible] the exact combination that will [illegible] ordinary knowledge of disease o[illegible] his cases to the skilled layman, who has a sound knowledge only of the workings of his apparatus, cannot supply this deficiency. Experience, which is a staff to the hand of the wise, is a rod for the back of fools. Unfortunately, in this case the punishment is too often administered by proxy, as it is the patient who suffers both in health and pocket for the *selfish considerations which prompt his medical attendant to* suggest this unethical course.

I am, Sirs, yours faithfully,

Leytonstone, Aug. 9th, 1904. CLARENCE A. WRIGHT

FREE OPERATIONS.

To the Editors of THE LANCET.

SIRS,—Your excellent special article on "Medicine and the Law" in THE LANCET of August 6th, p. 419, reminds us that in the case in question Miss Thorne operated without fee or reward, and has now been recompensed by the anxiety of a trial and the unpleasantness of a verdict against her. Was this patient really a case deserving of free operation? Would she not have been able to pay a moderate fee either to a London operator or to one of the excellent surgeons in the town from which she came? I am sure most provincial surgeons could give instances of well-to-do patients who have got operations done free in metropolitan hospitals or nursing homes and whose object in leaving their own localities was to escape the payment of surgical fees. Can any argument be advanced to justify this state of things? *Probably it is due to the* overcrowded state of the special departments of the profession in metropolitan cities and the desire of junior practitioners to gain experience, but that does not make it right. In some cases it is an abuse of hospital funds subscribed to benefit the deserving poor. In all cases it is an abuse of the charity of the medical profession and an injustice to provincial surgeons. Surely every possible care should be taken to separate the undeserving and often ungrateful from the really poor.

I am, Sirs, yours faithfully,

Belfast, August 8th, 1904. JOHN CAMPBELL.

THE INSURANCE OF MEDICAL MEN AGAINST THE DANGERS OF THEIR PROFESSION.

To the Editors of THE LANCET.

SIRS,—The first part of the letter which appeared in THE LANCET of July 30th, p. 327, signed by Mr. John [illegible] mis-statement of fact that calls for [illegible]. The subject of misrepresentation when raised by my counsel was at once objected to by the counsel representing the Scottish Accident Company and the objection was upheld by the arbitrator who said that it was not material to the matter under arbitation, which he further explained was limited to the terms of the policy which constituted the contract between the parties to the suit. I was therefore precluded from calling evidence on this point, although the agent, Mr. Croucher, was present in court. The bias underlying the entire letter is so self-evident as to relieve me of the necessity of dealing with any other of the points raised.

I am, Sirs, yours faithfully,

Guy's Hospital, S.E., August 5th, 1904. JNO. EYRE.

THE REPUTATION OF SIR EVERARD HOME.

To the Editors of THE LANCET.

SIRS,—The reputation of Sir Everard Home is severely dealt with in an annotation in THE LANCET of July 23rd, [illegible] t himself hopelessly [illegible] SS. *of John Hunter* [illegible] ircumstance that he did this just after publishing a large work of his own and after his co-executor, Dr. Matthew Baillie, had left London gives to the act a worse complexion. But strict justice must be claimed for every offender, and I ask, Is it fair to write, *apropos* of John Hunter's MSS., that "the windbag Home owed all his knowledge and reputation to them and became F.R.S. and Hunterian lecturer on the strength of them"? [illegible] was *Hunter's brother-in-law, his pupil from 1772, his* [illegible] executor, and he wrote an excellent and appreciative [illegible] f Hunter the year after his death in 1793. The best account of Home that I know is that given by Sir Benjamin Brodie in his autobiography, a little work which is a pattern of candour and right feeling. Brodie was a pupil of Home (1803) and later his assistant, continuing for a number of years to work with him in dissections, in comparative anatomy, &c. He therefore knew him intimately, and yet being himself connected with Matthew Baillie through the Denmans, and constantly working with Clift, Brodie was also in touch with other custodians of John Hunter's fame. The dispassionate in different places showed a different incidence under the same conditions, this was due partly to the presence of different quantities of tubercle bacilli but also to differences in predisposition of the population. From the year 1890 they began in Prussia really to fight against tuberculosis by making laws, by-laws of the sanitary police, and orders and instructions, especially for working men. Conradi and Koch believed that the decrease of tuberculosis in Prussia was caused by these measures, especially from the compulsory use of spittoons in public places, workshops, industrial establishments, and so on, but the sanitary officers and industrial inspectors reported that the working men did not pay enough attention to the orders; they did not make use of the spittoons and so prevented the destruction of the excreta. The decrease of tuberculosis really began in Prussia in 1880 —i.e., *ten years before the beginning of the anti-tuberculosis crusade* (1890), and in Bavaria about 20 years before that, in 1870, so that the new orders and instructions could not be the chief reason of this decrease, and the decrease was the same in agricultural districts where no special by-laws were made. In Germany in 1883 the great social laws were introduced for working men and the whole social condition was improved. By these laws pecuniary means were provided to fight against illnesses. The improvement of the social condition of all classes in the whole of Germany progressed with these new laws. Tuberculosis was chiefly an illness of the poorer people and attacked from four to six times more poor men than well-situated people. A great deal depended on predisposition and pre-existing disease weakened the resistance to tubercle. The fight against tuberculosis must be against infection, the disease, and predisposition. Infection was derived not only from man but also from warm-blooded animals. The infection of children from infected milk had been under-estimated by Koch, whereas Behring considered it of the greatest importance.

SECTION OF PREVENTIVE MEDICINE.

Physical Deterioration.

On this subject Lieutenant-Colonel O. T. **DUKE**, R.A.M.C., read a valuable paper, referring most of the instances of national deterioration to the faulty precautions taken by mothers with regard to their own health and to the vicious methods of up-bringing to which the infants were often subjected.

Mr. H. **BEALE COLLINS** (Kingston-on-Thames) read a paper entitled

Imperialism and the Doctor.

He said that a prominent politician had advised them all to think imperially. The health officer in his parochial work and the practitioner curing or alleviating disease were "doctors" who had acted imperially, whatever their thinking might have been, for however insignificant the parochial part might be it was one of the parts that went to make up the imperial whole. He alluded to the imperial importance of the decreasing birth-rate, not only in this country, but in some of the colonies, and pleaded for greater care to be taken of the nursing mother.

Dr. F. G. **BUSHNELL** (Brighton) advocated the constitution of a Ministry of Public Health; and Dr. F. J. H. **COUTTS** (Blackpool) read a paper on the Administrative Control of Whooping-cough, Measles, &c., which was briefly discussed by Dr. J. W. **MASON** (Hull).

SECTION OF CHILD STUDY AND SCHOOL HYGIENE.

Alcohol and Children.

Dr. G. **CARPENTER** (London) discussed the effect of Alcohol on Children. He said there was a popular idea that alcohol was not only not injurious but was beneficial to children in health as well as in disease but this was open to grave doubt. Alcoholism was not rare among children and played a far greater part in the production of disease than had been recognised. Alcohol expended its main effects in children on the nervous system.

Importance of Normal Respiration in Childhood.

This was the subject of a paper by Dr. P. **WATSON WILLIAMS** (Bristol) who said that the assimilation of oxygen and the elimination of carbonic acid were essential for the continued activity of the muscles and of the tissues generally. The causes of defective respiration were both extrinsic and intrinsic; the results and the means to be adopted for their correction were both physical and biological.

The Vision of School Children.

Dr. J. P. **WILLIAMS-FREEMAN** (Andover) had investigated the eyesight of 1442 school children in West Hants. The statistics showed that 64 per cent. had normal vision as against 39 per cent. in London, according to Mr. Brudenell Carter.

Dr. J. A. **MENZIES** (Dover) discussed the

Influence of Certain Forms of Defective Sight on Education and vice versâ.

He said there was evidence to show that myopia was probably never congenital, whereas hypermetropia and astigmatism were. Education was a direct exciting cause of myopia. He advocated medical supervision of schools and education of teachers to take an intelligent interest in the sight of the children.

Mr. **JOHN JACKSON** (London) read a paper on

Ambidexterity.

He emphasised the importance of manual training for developing the special senses and the mind and went so far as to say that one-handed culture neglected one brain lobe which thus became more or less atrophied and positive mental depreciation consequently ensued.

Dr. F. J. **POYNTON** (London) discussed the

Influence of School Life on Rheumatic Children.

Children who were of rheumatic stock or who had suffered from an attack of rheumatic fever at some previous date were very frequently highly emotional and nervous. Such children were liable to get quite out of hand at home and for them the discipline of a well-conducted school was often most beneficial and brought about a distinct improvement in their general health. Where, however, active rheumatism developed school life was injurious to them. At first sight it might seem very unlikely that a child suffering from rheumatic fever could attend school, yet so insidious was the disease that among poor children this occurred repeatedly. One manifestation—viz., chorea—was nearly always rheumatic, but its importance, especially among the public, was not recognised as it should be. In three and a half years while attending the hospital twice a week he had taken notes of 225 cases of rheumatic fever in children under 12 years of age, 126 of whom had suffered from chorea. School work of all kind was injurious to the condition of chorea in the active phases.

Mr. J. **WARRINGTON HAWARD** (London) described in a sympathetic paper

The Aims and Method of the Invalid Children's Aid Association.

Many cases of disease could be treated perfectly well at home if only they could obtain a small amount of nursing help. In diseases of a chronic character the amount of medical supervision required was often small; a visit to the medical man once in two or three months would in many instances suffice if the medical instructions were properly carried out in the intervals and it was for these cases that the association was so valuable. The method of the association was described.

Dr. **LEONARD G. GUTHRIE** (London) read a paper on Mental Overstrain in Childhood and Dr. **FLETCHER BEACH** (London) discussed the Diagnosis and Treatment of Feeble-minded Children.

LADIES' SECTION.

The State Registration of Nurses

was discussed in three papers.

Mrs. **BEDFORD FENWICK** (London) gave details of what had been done in other countries in this direction and suggested the formation by Act of Parliament of a General Nursing Council and the institution of measures providing for the efficient education of nurses and granting them the legal status which was their due.

Miss **PLUM** (matron, Victoria Hospital, Folkestone) gave as her opinion that the registration of nurses by Act of Parliament was the only means by which a general standard of education and a definite system of professional control could be obtained; the standard should be a high one in all hospitals. By giving a recognised status to competent nurses a good stamp of women would be attracted to the nursing ranks.

Miss **ALICE BARLING** (Borough Sanatorium, Folkestone) discussed State registration as it affected the private and the public nurse. She described instances of how at present anyone with the smallest knowledge might style herself a nurse and considered that State registration would be of immense advantage both to the public and to the medical practitioner

Dr R S MARSDEN (Birkenhead) said they must all agree that the case for the registration of nurses had been made out but they could n
nurse any more than
a doctor The untrai
their living in the same way It was not physiology that the nurse wanted it was common sense

Mrs SCHARLIEB M D (London), read an instructive paper on

Laws of Health for Girls during the years of Adolescence, at Home and at School

She discussed her theme under the headings of (*a*) pure air, (*b*) adequate warmth, (*c*) suitable food, (*d*) duly regulated exercise and rest, (*e*) personal care and cleanliness, and (*f*) environment

SECTION OF BACTERIOLOGY

Milk-supply

The papers which came under discussion at the meeting of this section were the Collection and Transit of Milk from the Bacteriological Point of View—(*a*) the Methods Adopted by Railway Companies, by Dr T D LISTER (London) (*b*) Bacterial Contents of Milk at the Points of Origin and Distribution by Dr J W H EYRE (London) showing the great increase in bacterial contamination when milk reached the consumer, (*c*) Bacteriological Technique by Mr G L EASTES (London) dealing with the methods of examining milk, and (*d*) Veterinary Control of Dairy Herds by Mr S VILLAR F R C V S (Harrow) who pointed out that the necessity for veterinary supervision of dairy herds was not sufficiently recognised The most important point in securing the purity and good quality of milk was that it should be produced by healthy and clean cows which were kept in healthy and clean surroundings It was a common thing for milking cows to be kept in a filthy condition in most insanitary surroundings To the veterinary surgeon should fall the duty of insuring that the cows were properly and sufficiently fed, that their water supply was pure their sheds kept clean, and many other details

At the conclusion of the morning sitting the following motion was adopted —

That this section hereby forwards to the council of the Institute the following resolution—viz That this section being of opinion that
nterest, for the purposes of
sumer hereby requests the
alth to consider the whole
decision

Mr W HUNTING, F R C V S (London) read a paper on

The State Control of Measures for Stamping Out Glanders,

in which he advocated the compulsory notification of all cases compulsory slaughter of diseased animals, use of mallein to detect latent disease and cleaning and disinfection of stables and Mr MCPHAIL, M R C V S (Edinburgh) urged the necessity for municipal veterinary inspection

SECTION OF ENGINEERING AND BUILDING CONSTRUCTION

Mr FRANCIS GOODRICH (London) discussed the

Disposal of the Waste of Public Institutions and Works

in which he described various forms of destructors and the same subject was also dealt with by Mr I L WATSON, A M I C E (Leeds)

Mr WILLIAM MAXWELL A M I C E (Tunbridge Wells), read a paper on

The Conservation of Subterranean Water supplies

He concluded that having regard to the large and increasing population in this country entirely dependent upon subterranean water supplies the question of conserving and augmenting this source of supply was one of growing importance and was destined to play an important part in the sanitary and water engineering works of the future

SUB SECTION OF PHYSICAL TRAINING OF THE FORCES.

Surgeon General G J H EVATT, C B, read a paper entitled "Suggestions for the Improved Organisation of the Medical Services of the Volunteer Forces, and Brigade Surgeon Lieutenant Colonel J L TURTON A M R, dealt with a similar topic as affecting the Army Medical Reserve while Brigade Surgeon Lieutenant-Colonel W HILL CLIMO discussed Military Service and National Health

ANNUAL GENERAL MEETING

The annual general meeting was held on July 26th, when votes of thanks were passed to the President, the Earl of Radnor, to the Mayor of Folkestone and the local committee to the Dean of Canterbury and other ministers, and to the presidents, vice presidents, and secretaries of sections

Dr W R SMITH was re elected President of the Institute and the nomination of officers and council was accepted

THE OPENING OF THE "POLICLINICO" AT ROME

(FROM OUR ROME CORRESPONDENT)

ABOUT 30 years ago when the proposal was made by Guido Baccelli that the various clinics of Rome should be united under one roof, these institutions were scattered over the city at points so distant from one another that little or no coöperation was possible between them and a vast deal of expense was incurred in the maintenance of a number of separate and independent establishments which could ill be spared from the scanty funds available Not only so, but the buildings, mostly old monasteries and churches, in which they were housed were out of repair and totally unfitted from their construction and surroundings to the purposes of a hospital They were overcrowded and ill ventilated, and on account of want of space and suitable premises it was impossible to organise their service in an efficient and satisfactory manner Whilst this condition of things was detrimental to the interests of patients to a degree which cannot be estimated, but was certainly deplorable the interests of the medical profession suffered to a corresponding degree Much time was necessarily wasted by students in passing from one section of their clinical studies to another and much valuable material for study was lost owing to the impossibility of making use of it For the surgeons and physicians who had to do their work under such conditions the difficulties were enormous and for the former especially, well nigh insurmountable It is true that the results of operative work by such men as Durante, Postempski Mazzoni and Bastianelli in the Roman wards will compare favourably with that accomplished elsewhere under all the advantages which modern science supplies But these results have been secured in the face of difficulties which would make most surgeons despair and the removal of these difficulties will undoubtedly give a great impetus to Roman surgery

The idea put forward by Baccelli and elaborated by Durante was caught up with enthusiasm by the nation and
50 000,000 lire (£2 000 000) was
to the municipality of Rome for
the amount was provided for the
express purpose of carrying out this scheme In 1881 the principal clinicians of Italy met in Rome to place the project on a scientific basis and architects were invited to compete for the construction of the new hospital The successful competitor was Podesti and after many delays, due chiefly to the difficulty of choosing a suitable site, the work was at length begun in 1888 For a time the buildings were pushed on with alacrity and already in 1894, when the great International Congress of Medicine, which was attended by 9000 medical men, met in Rome all the members were impressed by the vastness of the structure The work continued to progress, though more slowly until in 1900 it was practically complete Unfortunately, as pointed out by Professor Bossi a few weeks ago in the Chamber of Deputies, the handing over of the management of the Policlinico in that year to the Board of Administration of the Roman Hospitals led to much delay and to some mistakes One serious error committed under its direction was to place 100 beds in each pavilion in two wards, one over the other and communicating in such a way that the vitiated air from the lower ward flowed into that above An attempt was also made to omit the arrangements for central heating on the plea that in Rome these were unnecessary and that heating the wards by simple braziers would be sufficient Such changes and disputes, together with want of the funds necessary to prosecute with dispatch the completion of the corridors

connecting the pavilions and of the internal fittings and furnishings, led to delays that seemed interminable and to injuries to the building itself inevitable in an edifice kept closed and uninhabited. Large sums have been required to make good the damage so caused, adding considerably to the cost, already enormous, of the structure itself, a cost which has nearly approached a total of three-quarters of a million pounds sterling.

A few facts and figures cited by Professor Bossi in the speech already referred to serve to show the pressing need which existed for the speedy opening of the Policlinico. In the first place, it is impossible to complete the systematising of the Tiber until the part of the Hospital of Santo Spirito now occupied by Professor Baccelli's clinic has been pulled down and the way opened up for the building of the new bridge over the river, the Ponte Vittorio Emanuele, by which it is proposed to connect the "Città Leonina" with the "Città Urbana." Secondly, the present condition of the various clinics as regards space, buildings, and such-like requirements is quite inadequate to modern needs in respect of hygiene, scientific progress, and teaching facilities. For example, the surgical clinic has officially but 27 beds for 200 students and Professor Durante who directs it has been obliged to convert part of his wards into a *casa di salute* in order that, by taking paying patients, he might be able to increase the number of his beds from 27 to 60. The obstetric clinic with 200 students is limited to 20 beds for obstetric and ten beds for gynæcological cases. Again, as already indicated, the distance between some of these clinics is so great that it is not possible for the most zealous students to frequent them all. For example, the medical and pediatric clinics at Santo Spirito, the obstetric clinic at San Giovanni, the surgical clinic in the Via Garibaldi, and the dermosyphilitic clinic at San Gallicano are almost as widely separated as they could possibly be. Finally, in respect of sanitary conditions it need only be remembered that the hospital accommodation of Rome in 1870, when the population numbered 180,000 inhabitants, was the same as it was at the beginning of the present month with a population now numbering 500,000. The consequences may easily be imagined. The hospital wards contain twice or even thrice as many patients as they ought to accommodate. To cite only one or two instances, the ward of San Carlo at Santo Spirito, adapted for 100 beds, holds at times as many as 228, and that of Santa Maria at the same hospital contains 140 in place of the normal 85. At San Giovanni the ward Pucinotti contains about 100 instead of 50 and the ward Mazzoni 110 instead of 64. At San Giacomo, in the Corso, it was necessary to appropriate as wards the rooms occupied by the nurses and attendants who have been obliged to live outside, thus greatly weakening the service of the hospital. As a result of this overcrowding tuberculous patients are unavoidably placed side by side with those suffering from other diseases, and it is a fact that as many as ten of these cases may be found in each ward of Santo Spirito, constituting so many permanent foci of infection. The state of things in the maternity hospitals is more deplorable. In these and in San Giovanni there are altogether 75 beds available for the annual 7500 parturient poor of Rome. It frequently happens that one of these unfortunates, on the eve of being confined, has to go the round of all the institutions before finding a bed, and, still worse, on the third, fourth, or fifth day of the puerperium has to be sent out to make room for some other.

At least until a few days ago such has continued to be the condition of the Roman hospitals. But, happily, the long looked for opening of the Policlinico is at last an accomplished fact, for on August 2nd the arrangements for the reception of patients were complete and on the 5th there had been admitted over 500 patients, nearly all of whom were conveyed from San Spirito, San Giacomo, and San Giovanni. At present the patients are placed in the ten central pavilions and none of the surrounding clinics are occupied, but it is hoped that funds will still be found to equip the latter or at least the two general clinics of medicine and surgery. It will thus be seen that although now open, and although the pressure on the other three great hospitals is thereby relieved, yet the Policlinico still falls short of realising the original conception of Baccelli whose idea was to build a model hospital of at least 1200 beds surrounded by all the clinics. The sinews of war were lacking and the design of the architect as it stood in 1883 could not be executed in its entirety; indeed, it is said that at one period—in 1898—the financial outlook was so gloomy that it seemed as if the whole enterprise must collapse and there was even some talk of converting the buildings into military barracks. Happily it was possible to introduce modifications which curtailed the expense and so saved the institution from shipwreck, but these necessarily sacrificed a part of the original plans and so restricted the hospital to its present less ambitious proportions. Even in its actual state it covers 160,000 square metres and consists of 26 large buildings and many smaller ones. There are ten pavilions, each capable of receiving 84 patients, a special wing for infectious cases, and a great central building for administrative purposes; also buildings for clinics of medicine, surgery, obstetrics, gynæcology, dermo-syphilopathy, ophthalmology, pediatry, as well as of oto-rhino-laryngology, of special medical and surgical pathology, and of neuropathology. The following professors, each with two assistants, have been appointed "primarii" to the pavilions—viz., on the surgical side R. Bastianelli, T. Ferretti, and R. Alessandri to Nos. 1, 2, and 3 respectively; and on the medical side T. Ferruccio, A. Zeri, V. Ascoli, U. Archangeli, E. Rossoni, G. Bastianelli, V. Pensuti, and T. Gualdi to the others respectively.

The opening of the Policlinico is regarded in Italy as of not merely local but of national importance, since its construction has been in great part a national undertaking and one in which the greatest pride is justly felt by all Italians who desire to see their country take its merited place in the foremost rank of science and civilisation. And it will be everywhere recognised that in carrying it through successfully Italy has done noble service to mankind in the face of the greatest difficulties and has erected a monument to her own honour which will bear lasting testimony to her charity and humanity.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

The Lord Chief Justice on "the Conscientious Objector."

IN the course of his remarks to the grand jury on July 28th at the Birmingham Assizes the Lord Chief Justice made some observations concerning the Vaccination Act with a view to obtaining uniformity of administration on the part of the magistrates. He wished, he said, to take the opportunity of saying a few words to them and through them to the general body of magistrates who had to discharge duties in regard to the working of this Act. He mentioned the matter on account of the very considerable number of representations which had been made to the Home Office as to the difference prevailing amongst magistrates in the administration of the Act of 1898. They were aware of the general provisions of the Act and the extremely salutary provision which had worked so well providing for vaccination at the houses of the children and thus avoiding the delay and difficulty which often arose from the parents having to take their children to be vaccinated. It certainly was a matter of great congratulation to those of them who had studied the question of the spread of the disease of small-pox to know of the improved supervision under which vaccination was now carried on, and that the salutary effects had been very marked since the Act was passed. They further knew that the legislature, in its wisdom, had thought fit to enact that there should be power to obtain, within a certain period, a certificate of exemption from vaccination on the ground that the applicant conscientiously believed that vaccination would be prejudicial to the health of his child. It was in regard to that provision that this difference of practice prevailed. Some magistrates appeared to think that they ought to be satisfied that vaccination would be harmful to the child, others seemed to think that they were entitled to have medical evidence before them that such vaccination would be prejudicial. He wished to point out that this was not the question which magistrates had to decide and it was from this point of view that he was desirous of assisting the authorities to secure uniform administration of the law. The section, as he read it, laid down two conditions, one that the person who applied "conscientiously believed," and the other that "he believed that vaccination would be prejudicial to the health of the child.' The only question the magistrates had to entertain was: Did the applicant conscientiously believe that vaccination would be prejudicial to the health of the child? With regard to the conscientious belief, of course, there were many occasions upon which there could be no doubt about it, but it was not sufficient that a man believed generally that vaccination was an improper thing or that he had been led to form that belief without considering the particular case of the child in point It must be an honest conscientious belief on the part of the applicant that vaccination would be prejudicial to the child in question It was no good to have a sort of general idea that vaccination was not good Applicants must not hold a general objection to it either on the ground of interference with the rights of the subject or on the point of parental control It must be the conscientious belief that vaccination would be prejudicial to the health of the child He trusted that by these remarks he might do something to secure a more uniform administration of the law upon the lines which he believed the statute indicated

Notification of Consumption

At the last meeting of the City Council Alderman Cook, chairman of the public health committee, brought up a recommendation from that committee that a system of voluntary notification of tuberculosis of the lung be approved and that the committee be authorised to take the necessary steps to put the same into effect He said that many years ago the treatment of consumption was taken very little notice of It was regarded as an incurable disease and he could remember the time when trade societies hesitated to admit men as members in whose family there was consumption But during the last 50 years a great deal of attention had been given to the subject By means of improved sanitation, better housing, better food, and better general regulations respecting health the ravages of consumption had been reduced by 50 per cent But a great deal remained to be done What the committee desired was to know where the cases were in order that means might be taken, if necessary, to secure the isolation of the sufferers and also to assist in preventing, as far as possible, the spreading of the disease In Birmingham there was an average annual death rate from tuberculosis of nearly 1100 and that showed the importance of the subject because, after all, small pox, scarlet fever, and the other infectious diseases did not cause anything like the number of deaths that consumption did Last quarter, of all the deaths in Birmingham one in every 12 was due to phthisis Therefore, if the committee could only do something to reduce the mortality they would accomplish a great work The notification would be regarded as absolutely confidential and would not be allowed in any way to prejudice the patient The committee would prefer compulsory notification but they thought the time had hardly arrived for that The experience of other towns was that by voluntary notification about 50 per cent of the whole of the cases were notified The cost of voluntary notification would be about £300 per annum and he thought the money would be well spent In the course of the discussion Councillor Middleton, as an official of a friendly society testified to the growth of consumption and expressed the opinion that voluntary notification would do much to help the committee in putting down the disease In his opinion there was no reason why the committee should not endeavour to stamp out the disease by the provision of sanatoriums without pauperising the patients as might be the case if the work were undertaken by the board of guardians It was quite as important that the disease should be stamped out as it was that they should get rid of scarlet fever and small pox In reply to various questions which had been raised in the course of the debate Alderman Cook stated that the first step would be to see how far [illegible]

[illegible] people to carry out suggestions which in the ordinary way would not occur to them They were proposing to circularise every medical man in the city that they would be paid the same rate for notification as in the case of other diseases—namely, 2*s* 6*d* per case The committee expected to receive through medical men information of about 50 per cent of the cases He added that he thought the voluntary notification would in a reasonable time lead to compulsory notification It was doubtful whether the climate of Birmingham was suitable for a sanatorium but something might be done in the way of making provision for the very poor He thought they could accomplish more by preventing contact than by climatic improvement They were completing the hospital in Yardley road and he was hopeful that in due course the health committee would have some recommendation to make which would meet with the approval of the Council The motion for voluntary notification was carried

'Homes, Limited

It will be remembered that, as detailed by me in a former letter, this company was started with the intention of providing cheap and sanitary homes for the poor in the centre of the city The company chose a site in the very centre of the city, erected admirable buildings, and offered 60 dwellings at rents varying from 3*s* to 4*s* 3*d* and 5*s* per week The remarkable fact that has appeared after the first year of this experiment has been that the company, instead of having been overwhelmed with applications has actually found it difficult to secure tenants This is a pungent criticism on the contentions of some that the city council was to blame for not launching out into a huge scheme for the erection of such dwellings

August 10th

MANCHESTER

(FROM OUR OWN CORRESPONDENT)

The Royal Infirmary Trustees

A SPECIAL general meeting of the trustees of the Manchester Royal Infirmary was held on July 27th to consider, and if thought advisable to approve, the following motion —

> That the plans for the new infirmary on the Stanley grove site with the estimate of cost being submitted to the trustees the board of management be authorised to proceed with the building of the new infirmary at Stanley grove

The chairman Mr W Cobbett, moved its adoption He said that the building of the new infirmary would occupy three years The plans and estimates were before the meeting They had been approved by the board of management and the medical board and it was for the trustees to sanction them or otherwise The estimate for providing accommodation for 589 beds was £322,193, with the addition of £16 109 for extras making a total of £338 302 With architects commission, payments to clerk of the works and others the cost of furnishing, &c, the total estimate came to £430 475 He then touched on a question exciting much interest, that of a central receiving house There does not seem any urgency as to this matter just now, but many are anxious to have the question settled The board says it will consider it and when it is in a position to do so will recommend one thing or the other but it must be decided ultimately by the trustees themselves One of the matters to be considered is the provision of ambulances A subcommittee of the board was appointed to meet the watch committee of the corporation which met the subcommittee sympathetically and said practically that if the board would provide buildings at the new infirmary it would make it one of its principal stations and 'run the ambulance' at the expense of the corporation There has not been time yet to complete the negotiations An amendment to the motion was moved approving of the plans except for the out-patient department Those for this department are to be held in abeyance till the question of an emergency hospital near Piccadilly be decided In the event of such provision being made the out patient department would not require to be as extensive as shown on the present plan After a good deal of discussion the motion with the following addition was suggested by the chairman —

> This resolution is without prejudice to the question of the provision of a central receiving house and out patients department which the board undertake to consider and make a recommendation upon to the trustees at the earliest possible moment

Many think that with the constantly increasing facilities for locomotion and the provision of a good ambulance service there is no longer any need for a central hospital, with its out patient department and separate requirements as to administration Others think it would be a 'terrible mistake not to have a central receiving hospital No doubt the *pros* and *cons* of the question will be well threshed out One of the trustees urged careful consideration of the great cost to which they were committing themselves As he said, the estimated cost is between £700 and £800 per bed and the cost of maintenance would be on a higher scale than at the present infirmary The cost per bed does seem very high but this gentleman did not propose any plan for its reduction.

Hospital Amalgamation.

Negotiations have been proceeding for some time between the boards of management of the St. Mary's and the Southern Hospital and the authorities of the Victoria University that have resulted in an arrangement for the amalgamation of the two hospitals. This is subject to the approval of the subscribers, which, however, will probably be obtained. The new hospital in Gloucester-street will be devoted to maternity cases and will provide about 100 beds and a training institution in midwifery for students and nurses. An out-patients' department for women and children will also be retained there. The Southern Hospital will be built on a site facing Oxford-road, opposite Whitworth Park, and will be used for the treatment of the diseases of women and children. When the scheme is completed there will be 225 beds devoted to midwifery and the diseases of women and children. "There will also be a school for the education of medical students, midwives, and midwifery nurses," an arrangement which reads curiously to those whose ideas have not progressed with sufficient rapidity. The danger of overlapping will certainly be removed. The title is to be "The St. Mary's Hospitals," but probably the old names will continue to be used for the sake of distinction.

Reservoirs at Audenshaw.

At the meeting of the Manchester city council on August 3rd Alderman Sir John Harwood made a somewhat disquieting statement as to the Audenshaw reservoirs and works. They are near Manchester and serve as the distributing centre for the water supplied by the Woodhead chain of reservoirs. He said that the waterworks committee had been anxious about them for a considerable time and had been watching them closely both day and night for more than two years. There are coal-mine workings in the neighbourhood which have caused sinking of the ground and "have made it necessary to reduce the holding capacity of the reservoirs in that township below top-water level to an extent equal to the loss of 330,000,000 of gallons." The whole district—houses and a chapel—has been damaged and sunk between two and three feet and the movement is steadily going on. When the corporation bought the land it was not aware that it was intended to get coal under it "and to buy out the coal would be a very expensive matter indeed." Sir John Harwood says that the corporation is not in any way to blame, but it is, at any rate, unfortunate that its advisers did not make such inquiries as would have enabled the corporation to protect itself against such a contingency as that now threatening. Sir John Harwood says, moreover, that in law they are entitled to support for their lands, but it would seem a difficult task to prop up a reservoir. Whether the subsidence will go much further depends, of course, on the character and extent of the working of the coal mine, as to which no information was given.

Death from Anthrax.

An inquest was held at Altrincham on August 6th concerning the death of a hawker. On August 2nd he took a load of bones to Manchester and afterwards complained of pain in his arm. He was taken to the Altrincham Hospital where he died. The medical evidence attributed the death to anthrax, "which might have been contracted on the Tuesday or have been in the man's system a fortnight." No details of the case are reported. Outbreaks of anthrax have occurred so frequently of late in Cheshire as to cause much anxiety. One of the districts recently visited is Malpas, where 15 pigs were affected, most of which died and were cremated.

August 9th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Payment of Poor-law Medical Substitutes.

AT a meeting of the Mountmellick guardians held on August 6th the application for leave of absence from Mr. E. F. Hogan was considered. Mr. D. Edgar Flinn, medical inspector of the Local Government Board, attended, and at his request a letter dated July 12th was read from the Local Government Board suggesting that the guardians should grant not only the full four weeks' leave of absence to their medical officer but should also pay his substitute for the entire period. Mr. Flinn mentioned that a special Act of Parliament had been passed securing recoupment to boards of guardians of the fees of medical officers' substitutes. The Chief Secretary had stated that if any cases of hardship were brought to his notice he would make the leave compulsory. Now it is years since a former Chief Secretary promised that a month's leave would soon be rendered legally compulsory in all cases. Observe the result in this particular case: Mr. Hogan was granted two weeks' leave, his substitute to be paid at the rate of three guineas a week only.

The late Dr. W. A. McKeown.

At a meeting of the friends of the late Dr. McKeown held in Belfast on August 2nd it was unanimously decided that "a suitable memorial should be raised to perpetuate his memory." A committee was appointed to further the object. The form which the memorial is to take has not yet been decided upon.

The Proposed Sanatorium for Consumptive Patients.

At a meeting of the Belfast corporation held on August 2nd it was decided to erect a municipal sanatorium for consumptives through which annually 300 to 400 patients might go. It is proposed to take early cases from the guardians, who will pay half the maintenance, and paying patients will also be received. It is said that 1100 people die from pulmonary tuberculosis each year in Belfast, and in the past four weeks 79 have succumbed to it, so an institution for this preventable disease is much needed in the city.

Rainfall in July in Ulster.

Rain fell in Ulster to the extent of 3·75 inches (which is rather under the average—3·92) on 24 days in July. The total rainfall this year is now 20·78 inches, which is slightly under the average and distinctly less than in 1903. The old tradition in regard to July 15th has not held true, as St. Swithin's day was an extremely wet one.

Royal Victoria Hospital, Belfast.

Mrs. Pirrie has just presented 17 beautiful iron enamelled medicine cabinets to the hospital for each of the wards, which makes the furnishing very complete, and indicates the continued interest taken in this institution by one who has been such a generous benefactor.

Ulster Eye, Ear, and Throat Hospital.

Dr. W. M. Killen, who for the past 14 years has been assistant surgeon, has been promoted to fill the post of surgeon in place of the late Dr. McKeown. Dr. R. Allen has been selected as assistant surgeon.

Outbreak of Small-pox in Armagh.

A patient from near Middletown, county Armagh, who was admitted to the union hospital in the city of Armagh with small-pox died there on August 3rd, and five new cases have since been admitted and nine "contacts" have been isolated. A very large number of people are being vaccinated, although it would appear that the Local Government Board has not been able to supply an adequate amount of calf lymph, owing to which considerable disappointment prevailed among those who wished to be revaccinated. A case of small-pox has occurred in the person of a police-constable in the barracks, Barleek, in the Newry union. This case is believed to have been imported from the town of Armagh. The disease has made its appearance also in Dublin.

The Belfast Ambulance System.

The work in connexion with the ambulance branch of the Belfast fire brigade has been very arduous during the year ended June 30th last, 2393 calls having been received, occupying 1343 hours 41 minutes, and showing an average of 33⅗ minutes per journey from the receipt of the call until the carriage returned to its station. The distance traversed was 8249½ miles, or an average of three and a half miles per single journey.

August 9th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Action of Sulphurous Waters upon a Mercurial Course.

IT has been demonstrated in varying circumstances that the administration of sulphurous waters to patients undergoing a mercurial course of treatment will prevent the phenomena of mercurialism. At the meeting of the Medico-Chirurgical Society, which was held on July 11th, M. Desmoulière cited two interesting observations which go to support the above statement. From his researches he had ascertained that in addition to the known effect of sulphurous waters upon the excretions, both cutaneous and urinary, it was necessary, in order to explain their effect upon a course of mercurial treatment, to take into consideration the following facts. The absorption of mercurial salts by the organism is under certain conditions very slow, as, for instance, when they are given by the mouth in the form of the bichloride or the proto-iodide, or when they are given by injections, especially when insoluble salts are used. These mercurial salts form albuminates which remain unabsorbed and cannot act until they are rendered soluble. Sulphurous waters, however, contain compounds which are capable of dissolving these albuminates with much greater facility than chloride of sodium which is the chief means by which the organism is capal [illegible] therefore, that th [illegible] during a mercurial [illegible] mercury as it is ad [illegible]

The Effect of Diuresis on Albuminuria.

At the meeting of the Society of Biology which was held on July 16th M. Javal stated that he had observed that in the case of nephritic patients, the hydration of whose tissues varied very little, the ingestion of an excess of water simply diluted the albumin. Therefore if the amount of albumin was estimated as so much per litre of urine passed it appeared less than before, but in reality the total amount remained the same. In cases of polyuria, if the increase in the volume of urine passed was due to dehydration of the organism, the effect on the albuminuria was by no means the same as when the polyuria was due to the ingestion of a large quantity of water. Therefore, in studying the amount of albumin passed by a patient suffering from nephritis it was important to take into account the variations in the total quantity of urine passed and the causes of these variations, for it will easily be seen that the total amount of albumin passed during 24 hours gives figures much more trustworthy than a mere estimation expressed in terms of so much per litre of urine passed.

The Treatment of Varices and of Phlebitis by Movement.

At the meeting of the Academy of Medicine which was held on July 26th M. Lucas-Championnière read a paper upon some researches of M. Marchais concerning the Treatment of Varices by Exercise. This treatment is a natural corollary to the bold surgical treatment of the veins which followed upon the introduction of the antiseptic system. Veins can now be tied, cut, excised, or treated just in the same way as any other tissue provided that sepsis is avoided. Recently even inflamed veins have been removed. Phlebitis and embolism are not necessary consequences of traumatism or movement and since 1878 *M. Marchais has given up keeping his female patients* who were suffering from phlebitis at rest. As for embolism, those cases which occur very uncommonly and have been observed in patients suffering from fracture have had nothing to do with movement, for those which M. Marchais has been able to collect, whether in his own practice or in that of other surgeons, have occurred when the fracture had been immobilised and kept absolutely at rest. He therefore considers that the complications of phlebitis are rather the consequence of treatment by rest than of the phlebitis itself. In cases of varix M. Marchais forbids his patients to stand still but treats them by gentle massage and walking. Elastic stockings are banned and as a preliminary to the walking he uses massage for from 15 to 20 days previously. Then he makes his patients walk quickly—i.e., at least 100 steps per minute. Only a short distance is walked at the beginning, but eventually the patient walks for an hour or even two hours. Swedish exercises are also useful as well as the use of the tricycle or bicycle.

Experimental Reproduction of the "Mal de Bassine."

"Mal de bassine" *is a trade dermatosis* which under certain conditions attacks the hands of silk-winders who are employed upon cocoons reputed to be "sick." M. Heim and M. Pautrier have made a special study of this disease and communicated a paper thereon to the Society of Biology at the meeting held on July 23rd. Some observers have attributed the disease to the product of putrefaction from the chrysalis as it macerates in the warm water of the "bassine," others to some vesicating product of the silkworm which is taken up by the silk. M. Heim and M. Pautrier took cocoons from lots which had apparently given rise to this dermatosis and rubbed the chrysalides up with an oily substance so as to form an ointment. This ointment applied to the skin gave rise to a dermatosis closely resembling other artificial dermatites. The skin became red, œdematous, and sometimes small vesicles appeared. It is evident, then, that the chrysalis of the mulberry silkworm contains a vesicating principle which with the aid of the macerated condition brought about by the warm water will reproduce when applied to the skin a dermatosis exactly like that called "mal de bassine."

The Action of Radium upon some Nervous Maladies.

M. Raymond and M Zimmer communicated to the Academy of Medicine on July 26th the results of the application of a tube of radium containing five cubic centimetres to various patients suffering from nervous affections. The tube was kindly lent by M. Curie. In hysterical cases the results were *nil* and the same was the case in musculo-spiral paralysis and acute facial neuralgia. Very remarkable results, however, were obtained as regards the painful phenomena of tabes Peripheral pains were rapidly and completely relieved and in several grave instances of gastric crisis great relief was obtained. These results induced the observers to try the effects of x rays and they consider that they met with great encouragement. They intend to communicate these results at some future meeting of the Academy.

August 9th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

The Study of Medicine in Germany.

THE central committee of the German Practitioners' Association has just issued a warning to those who may be thinking of entering the medical profession. The committee states that so long ago as 1887 it had addressed school authorities and the daily press to the same effect and that at the time the condition of the medical profession was described as "difficult, perhaps unfavourable," and its prospects as sad. This prediction, now says the committee, has proved true, the standard of life of the profession being considerably lower at present than at any previous time. Three causes are alleged for this condition—overcrowding of the profession, the abolition of the anti-quackery laws, and the legislation on the workmen's insurance. The number of medical men has doubled since 1876 and they reside in any place where there is a chance for them to gain a modest livelihood even under the greatest difficulties. The abolition of the anti-quackery laws has had the effect of increasing the number of unqualified people practising medicine. Disreputable persons, sometimes former criminals, get an extensive *clientèle* by unscrupulous advertisements and arrange public meetings at which qualified medical men are attacked and insulted. It is remarkable that even cultivated laymen are inclined to prefer the advice of unqualified persons, so that in some places in Germany their number exceeds that of the qualified practitioners. Concerning the influence of the workmen's insurance laws the committee alludes to the insufficient fees paid by the clubs, to the dependent position of the club medical officers, and to the necessity of canvassing for employment at clubs. Since nine millions of people—i.e., more than one-sixth of the population—belong to sick clubs, their influence is very great. The competition for club appointments has indeed been very prejudicial to professional etiquette and has led to disagreeable controversies between medical men, especially in the smaller towns. Although the opinion of the committee is well founded and clearly expressed it is very unlikely that it will have any influence on the forthcoming candidates for the medical career.

Medical Degrees.

During the winter semester 611 medical men took the degree of M.D. at the German universities. Of these 101 graduated at Leipsic and 26 only at Berlin, though the latter university has the greatest number of medical students. The cause is that the degree is little more than a formality, have been met, on self-supporting lines. It is hoped to raise £1000 by public subscription to enable a beginning to be made. Only women and girls will be taken at first. Patients are to be of three classes—(1) paying £2 or more a week; (2) paying £1 a week; and (3) paying 7*s*. 6*d*. a week.

Friendly Societies and Lodge Surgeons.

An action was recently tried in the county court, Melbourne, arising indirectly out of the establishment of a friendly societies' institute at Brunswick. When the various societies agreed on this undertaking they gave no proper notice to their respective lodge surgeons of the termination of their agreements but simply advertised for medical officers to the institute. In this action Dr. D. E. Stewart sought to recover from the trustees of the Shamrock Lodge, United Ancient Order of Druids, for medical attendance on members of the lodge for the quarter beginning February last and £5 for breach of contract to employ him as medical officer of the lodge; also damages for failure to pay the amount due for the previous quarter in time, and failure to furnish a list of members on whom he was to attend. The defendants paid £2 2*s*. into court in satisfaction of the first claim and 1*s*. for the third claim. The judge found for the plaintiff for the amount paid into court. On the issue as to breach of contract he found for the defendants.

Obituary.

Dr. Thomas Baynton, an old resident of Sydney, died at his residence, Ashfield, on June 6th. He arrived in Australia in 1840 and 30 years ago started practice in Sydney, having previously been engaged in pastoral pursuits. He leaves a widow who has been a frequent contributor to the Sydney press and has published a series of sketches in book form.

July 4th.

Medical News.

UNIVERSITY OF LIVERPOOL.—At examinations held in the Faculty of Medicine in July the following candidates were successful:—

SECOND M.B. AND CH.B. EXAMINATION.

Anatomy and Physiolog.—J. W. Cropper and G. W. Williams.
Materia Medica and Pharmacy.—T. T. Apsimon, E R. Armstrong, A. C. Edwards, S. J. C. Holden, A. Jones, T. Martlew, W. R. Pierce, J. H. Rawlinson, A. M. M. Roberts, R. S. Taylor, and S. V. Tinsley.

FINAL M.B. AND CH.B. EXAMINATION.

Part I.—J. F. Edmiston, B. T. J. Glover, T. E. Jones, J. F. McCann, J. McClellan, S. W. McLellan, R. H. Mole, L. D. Napier, T. W. Parry, C. H. Smith, F. H. Storey, C. Yorke, and W. Yorke.
Part II.—A. E. Grisewood,* W. L. Hawksley,* P. Hick, G. J. Keane,* W. A. Kidd,* G. C. Scott,* and T. E. Walker.

* With second-class honours.

The Diploma in Public Health has been awarded to—

D. T. Parry, M.D. R.U.I.

The Diploma in Tropical Medicine has been awarded to the following:—

. M. Clayton, M.B., B.S. Durh.; Saiduzzafor Khan, M.B. Edin. P. Hehir, Major I.M.S., M.D. Brux., F.R.C S Eng.; A. R. Maclurkin M.B., Ch.B Glasg.; J. E. Nicholson, Lieutenant-Colonel R A.M.C., M.R.C.S. Eng., L.R.C.P. Lond.; and N. Phillipson, L.R.C.P. & S. Edin.

The Diploma in Veterinary Hygiene has been awarded to—

E. E. Martin, Captain A.V.D., M.R.C.V.S.

FOREIGN UNIVERSITY INTELLIGENCE.—*Berlin*: Dr. Anton v. Eiselsberg, now of Vienna, has been offered the chair of Surgery in the Charité, which is being vacated by the retirement of Professor Franz König.—*Bologna*: Dr. J. C. Ferrari of Modena has been recognised as *privat-docent* of Psychiatry and Dr. Ivo Bandi as *privat-docent* of Hygiene.—*Bonn*: Dr. Binswanger having declined the chair of Mental Diseases, Dr. A. Westphal of Greifswald, a son of the late well-known Berlin professor, has been appointed. Dr. W. Reis has been recognised as *privat-docent* of Ophthalmology.—*Breslau*: Dr. Eduard Müller has been recognised as *privat-docent* of Internal Medicine.—*Freiburg*: Dr. Determann of St. Blasien has been recognised as *privat-docent* of Internal Medicine.—*Giessen*: Dr. P. Krömer has been recognised as *privat-docent* of Midwifery and Gynæcology.—*Kieff*: Dr. Szymanovski has been appointed to succeed Professor Khodin in the chair of Ophthalmology.—*Königsberg*: Dr. A. Stieda has been recognised as *privat-docent* of Surgery and Orthopædics. Dr. Hermann Streit has been recognised as *privat-docent* of Otology and Rhinology.—*Leipsic*: Dr. Hans [illegible] of Internal Medicine, has been appoir [illegible]ofessor.—*Marburg*: Dr. Lohmann has been recognised as *privat-docent* of Physiology.—*Munich*: Dr. Arno Scheibe has been recognised as *privat-docent* of Otology and Dr. Hubert Gebele as *privat-docent* of Surgery.—*Naples*: Dr. Giuseppe D'Arrigo has been recognised as *privat-docent* of Pathological Anatomy.—*Padua*: Dr. Amilcare Bietti of Pavia has been recognised as *privat-docent* of Ophthalmology.—*Pavia*: Dr. Domenico Della Rovere of Bologna has been recognised as *privat-docent* of Pathological Anatomy.—*Rio de Janeiro*: Dr. Luiz da Costa Chaves Faria has been promoted to the chair of Dermatology in succession to the late Dr. João Pizarro Gabizo.—*St. Petersburg (Military Medical Academy)*: Dr. A. Favitski has been promoted to an Extraordinary Professorship of Therapeutics.—*Strasburg*: Dr. Heinrich Ehret, *privat-docent* of Internal Medicine, has been appointed Extraordinary Professor.—*Tomsk*: Dr. Avroroff of St. Petersburg has been appointed Extraordinary Professor of General Pathology.—*Tübingen*: Dr. P. Linser has been recognised as *privat-docent* of Dermatology.—*Vienna*: The council of medical professors has decided to divide the chair of Pharmacology now vacant by the retirement of Professor v. Vogel into two professorships—one of Pharmacology, which has been offered to Professor Hans Meyer of Marburg, and one of Pharmacognosis, which has been offered to Professor Josef Moeller of Gratz.

PHYSICAL VOICE-TRAINING SOCIETY.—On July 29th, at the Clarendon Hotel, Oxford, a breakfast was given by Miss D'Orsey, honorary secretary of the above society, to some of the members of the British Medical Association, and a short business meeting was subsequently held. Canon Ince (regius professor of Divinity and one of the vice-presidents of the society) presided, while Dr. P. Watson Williams (Clifton) acted as vice-chairman. Amongst others present were Canon R. Ottley (regius professor of pastoral theology), Dr. W. Jobson Horne (London), Dr. E. Morton (Wolverhampton), Dr. A. T. Schofield (London), Dr. and Mrs. Stark, M.D. (Oxford), Mr. J. Stewart (Bristol), Dr. Herbert Tilley (London), and Dr. J. Wallace (Weston-super-Mare). The chairman proposed the following motion:—

> That the subject of voice-training, being of such vital importance to public speakers, greater attention should be paid to it in education, especially at the public schools and universities, in accordance with the memorial on voice-training of the British Medical Association.

Dr. Williams seconded the motion and said that medical men were being constantly brought into contact with the evil effects of bad voice production. He was of opinion that the educational authorities should take steps by which the evil could be remedied.—The motion was carried.—Dr. Horne then proposed the following motion:—

> That the *Physical Voice-Training Society*, founded by the originators of the memorial on voice training issued by the British Medical Association on Nov. 18th, 1893, is deserving of further support from the medical profession in general and the laryngologists in particular.

Personally he would like to see a national system of voice training established and for that reason he had pleasure in proposing the motion. Dr. Tilley seconded and said that voice training was a question of vital national importance. Some time ago he was invited by the London School Board to give a series of lectures on voice production. At the conclusion of the lectures he was asked to make a report. He did so and he considered that it was foolish that any girl between the age of 20 and 23 who had passed a difficult examination at great expense should be given a class of from 70 to 80 scholars and expected to speak to them for hours without any instruction as to the right use of the voice. He had suggested to the London School Board that if they would only appoint a dozen capable persons who understood the subject of voice production an enormous amount of good would accrue.—The motion was carried.—Dr. Schofield proposed a vote of thanks to Canon Ince and Miss D'Orsey.—The motion was carried unanimously and Canon Ince briefly responded.—The following were elected honorary vice-presidents of the Physical Voice-Training Society—Canon Ottley, Dr. Horne, Dr. Williams, and Dr. Tilley.

PROFESSOR V. V. PODVYSOTSKI has got an extension of his term, says the *Odessa Nocosti*, as doyen of the medical faculty of the Novorossisk University.

UNIVERSITY COLLEGE, LONDON.—The Worshipful Company of Drapers has discharged the debt of the College to its bankers to the amount of £30,000. The treasurer of the College has received from Messrs. Wernher, Beit and Co. their cheque of £10,000 which had been promised to promote the incorporation of University College in the University of London. For the completion of the incorporation scheme there remain £18,000 to be raised. We understand that the new hospital will shortly be finished and will be available for clinical study for the medical session beginning in October. The session 1904–05 will begin in the Faculties of Arts and Laws and of Science on Tuesday, Oct. 4th, and in the Faculty of Medicine on Monday, Oct. 3rd. The introductory lecture will be given by Professor J. N. Collie on Oct. 3rd at 4 P.M. Professor Oliver has been reappointed to the Quain Chair of Botany and Dr. F. J. Poynton has been appointed sub-dean of the Faculty of Medicine in succession to Professor G. D. Thane (resigned) who has received from the council the following resolution —

[illegible] ord their sense of the great [illegible] rendered to the College and [illegible] ears he has held the office of [illegible]

PATENT MEDICINES IN GERMANY.—Mr. Oppenheimer, British Consul-General at Frankfort-on-Main, in his annual report remarks that a law of great moment to the chemical industry which was passed in 1903 came into operation on Jan 1st, 1904. It concerns the traffic in patent medicines (*Geheim-mittel*) It is thereby enacted that only a certain small number of patent medicines may be sold, with the medical man's orders; 95 patent medicines have been excluded from public advertisement in any form, and in their case it is unlawful to recommend such patent medicines by printing on their enlcosures testimonials, certificates, statements of successes, expert evidence, and thanks. "Undoubtedly it was only intended," Mr Oppenheimer adds, "to render the sale of such patent medicines more difficult and not to prevent it altogether, but it is generally thought that the provisions of the enactment have overshot the mark. It will cause not only very considerable losses to the pharmaceutical industry but will also affect printing and lithographic establishments, paper, cardboard, glass, and cork factories, quite apart from the loss of workmen's wages. It is thought, moreover, that the prohibition of advertisement will render more easy the sale of imitation patent medicines which can in future only be detected by chance Finally, it may act as a discouragement in future to chemical factories and experts from paying the same amount of attention to the discovery of new patent medicines which until now have been a great source of revenue to the German chemical industry at large."

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS

Lunacy Bill Dropped.

The Lunacy Bill which the Government introduced on the morrow of the debate initiated by SIR JOHN BATTY TUKE has now been formally abandoned so far as the present session is concerned. It is hoped that it may be possible to re introduce it next year.

Medical Officers in Sparsely Populated Districts

When several of the Scotch estimates were under discussion on August 9th the question of procuring an adequate supply of medical officers in the more remote and sparsely populated districts in the Highlands of Scotland was mentioned It was pointed out by the Lord Advocate that it is exceedingly hard to find a way out of the difficulty In these districts there is little or no private practice possible, the medical officer cannot hope to obtain a much greater remuneration than the fees attaching to any public appointment which he may hold Is it to be wondered at, he asked, that young and capable men should seek openings elsewhere?

Vaccination in Scotland.

On the same evening some references were made to the administration of the vaccination laws in Scotland It was complained that a dangerous laxity is permitted On behalf of the Scotch Local Government Board the argument was used that it does not pay to make martyrs, and that for that reason the administration is less vigorous than in England But according to the Lord Advocate the majority of the people of Scotland are convinced of the value of vaccination and revaccination and no substantial grievance exists It was also elicited that only a very small quantity of humanised lymph is now used

The Home Office Administration.

On Friday, August 5th, a general discussion took place on Home Office administration, especially in reference to factories and workshops A good deal was said about the inadvisability of employing married women Mr. BURNS declared that the presence of these women in public works is one of the causes of the physical deterioration of the race To it also is due in his opinion a considerable percentage of infantile mortality. A demand for the appointment of additional women inspectors was very favourably received by the Home Secretary, who also stated that he had recently received a suggestion which he thought worthy of consideration—namely, that in addition to the qualifications which they now possessed women inspectors should have some experience of hospital work

Juvenile Smoking

The Bill to check smoking amongst juveniles which has just been introduced in the House of Common has, of course, no chance of becoming law this year It has been introduced merely for the purpose of focussing public attention on the subject. Early next session it will be re introduced. The proposal of the Bill is that any person under 16 who is found smoking shall be liable to a penalty of 10*s* —the fine to be recoverable from the parents—and that anyone selling tobacco to a child shall be liable to a fine of 20*s* for the first *offence* and 40*s* *for* the second

HOUSE OF COMMONS.

WEDNESDAY, AUGUST 3RD

Experiments on Living Animals

Mr TOMKINSON asked the Home Secretary whether his attention had been called to the increase in the numbers of medical and surgical
experiments performed on [illegible]
1903, as compared with 14,90[illegible]
he intended to take any st[illegible]
DOUGLAS said The increase [illegible]
the number of experiments [illegible]
included in Table IV (B) of th[illegible]
nature of simple inoculations [illegible]
ceedings It is pointed out on p[illegible]
is due mainly to the progressive [illegible]
tests generally in practical medicin[illegible]
[illegible] departments or for county or
[illegible] for the Royal Commission on
[illegible] uthority to perform experiments
[illegible] prepared to take action in the
direction suggested

The Advertising of Patent Medicines

[illegible]

Ankylostomiasis.

Mr MARKHAM asked *the Home Secretary whether in view of* Dr Boycott's report on the subject of the diagnosis of ankylostoma infection in mines and its recommendations, and of the fact that following his circular letter of March 10th to the [illegible]

Return of Death rates and Infantile Mortality.

[illegible] before it is put down

Hygienic Conditions of China and Earthenware Factories

Sir CHARLES DILKE asked the Home Secretary whether his attention had been called to the statement at p. 219 of the Factories Annual Report, to the effect that many china and earthenware factories were dilapidated and in great need of hygienic improvement; and whether, seeing that recommendations for the closing of the worst

Notes, Short Comments, and Answers to Correspondents.

MEDICAL ETIQUETTE.

At a meeting of the Burslem town council on August 7th Alderman T. Edwards is reported as having asked whether the medical officer of health saw all the cases of infectious disease notified before they were sent to the hospital. The chairman of the sanitary committee, Mr. Councillor Cartlidge, replied that the medical officer did not "as medical etiquette debarred him." Alderman Edwards thereupon said that the council should disregard such "etiquette." It was understood that the matter would come before the next meeting of the sanitary committee. The chairman of the sanitary committee of Burslem, in common with the majority of the public, does not understand what is meant by "medical etiquette." It is no part of the duty of a medical officer of health to pay a personal visit to every patient who is notified to him. The Infectious Diseases Notification Act imposed no fresh duties on the medical officer of health. The duty of the medical officer of health is to inquire into the circumstances and causes of an outbreak of infectious disease and he has full responsibility for how he may best carry out such an inquiry. He has no right to enter any private premises, except with a magistrate's order, but of course an application for leave to see the patient addressed to the medical man in charge of the patient and to the latter's friends would never be refused. The general practitioner is, as a rule, perfectly ready to discuss the diagnosis of a case with the medical officer of health and no trouble has ever arisen in the matter save where the medical officer of health has been unfortunately official in his demeanour. All these points have been dealt with in our columns in a series of articles which appeared in The Lancet as far back as 1895.

MOTOR-CARS FOR MEDICAL MEN.

To the Editors of The Lancet.

Sirs,—Are motor-cars cheaper than horses for a medical man? is such an important question that I feel sure you will think the statement of manufacturers' agents worth publishing space. For years I have contracted with the Victoria Carriage Co. for broughams, having a new one each year, and I lately wrote to them asking them to quote me prices for the motor-cars for which they are agents under the same conditions—that is, that they should keep it in repair and exchange for a new one every year. Their answer is that their terms would be so expensive that it would be satisfactory neither to me nor to them and they would not even give me a quotation. I keep two horses and one motor-car but so far my motor-car has cost me more than a horse, though not a year old, and my experience goes to show that no motor-car will stand regular wear, say six hours a day, for one year, and it seems that the manufacturers know it will not. I and many others would gladly pay £100 a year to feel we had a motor-car always in a fit condition to go and no horses to worry about. Will the time ever come? I am, Sirs, yours faithfully,

Plaistow, July 30th, 1904. A. E. Kennedy.

WHO IS TO PAY?

To the Editors of The Lancet.

Sirs,—A policeman during the night comes for a medical man to go to see a man at his home with a broken leg previous to removal to the union hospital. Whose duty is it to pay the night visit fee? I have received the account (5*s.*) back from the chief constable stating that he cannot pay it. Can the district medical officer be expected to attend without being paid if the man is not in receipt of relief and the police constable comes without the ordinary request paper from the relieving officer for parish attendance? I am, Sirs, yours faithfully,

August 1st, 1904. ———

*** We shall be interested to hear why this fee was not paid.—Ed. L.

THE TREATMENT OF METATARSALGIA.

To the Editors of The Lancet.

Sirs,—I should be grateful if some of your readers could give me a few hints as to the treatment of an obstinate case of metatarsalgia. The patient is a young lady, 23 years of age, and has suffered for about two years. Previous to the symptoms she had worn high heels but since then she has worn quite sensible boots. She has no excessive amount of standing or walking to do. The pain is getting worse rather than better, coming on at times in such force as to oblige her to stop in the street. I am, Sirs, yours faithfully,

August 9th, 1904. F.R.C.S.E.

THE PROMENADE CONCERTS AT QUEEN'S HALL, LONDON.

The present season of promenade concerts opened on August 6th, when the hall was packed from floor to ceiling. There is no greater rest to the mind than to listen to good music well played and Mr. Wood, his band, and those responsible for the organisation of the concerts deserve much thanks. The recent changes in the orchestra rendered it inevitable that the various items should not be given with that precision and delicacy to which Queen's Hall audiences have been accustomed, but it is also evident that in a week or so the new band may be expected to play as well as did the old one. On the opening night it struck us that Mr. Wood allowed his brass to be rather too prominent, especially as regards the trombones. The strings showed to great advantage, markedly (together with the wood wind) in the Peer Gynt Suite and by themselves in two items by Bach The only novelty in the programme was an organ concerto by Signor Enrico Bossi, which was not particularly interesting.

THE CONSULTING-ROOM THIEF.

To the Editors of The Lancet.

Sirs,—Would you kindly warn your readers against a consulting room thief who is again at large after having been in prison for numerous thefts from medical men? The man called on me to make an appointment for a "relative who lived in the country," &c., &c. Two days later he again called, this time when he knew I should be out, and asked to be allowed to wait for me as he could not come later in the day. He took what things of value he could find and soon decided that he could not wait any longer. He passes as a German or an Austrian, is well dressed, most polite in his manner, well-read, and understands every move in the game. He is about five feet seven inches in height, fair, clean shaved, and about 21 years of age; he is well set up and can easily pass as a foreign gentleman of means. He is wanted by the police for several thefts from medical men and should be detained if possible whenever he appears.

I am, Sirs, yours faithfully,

Gloucester-terrace, W., August 9th, 1904. Arthur James.

HOLMAN TESTIMONIAL FUND.

The following additional subscriptions to the above fund have been received. Further subscriptions, which may be sent to Dr. John H. Galton, Chunam, Sylvan road, Norwood, S.E, or to Mr. W. A. Berridge, Oakfield, Redhill, Surrey, are needed and will be announced at the close of the vacation.

	£	s.	d.		£	s.	d
Dr. Edgar G. Barnes ...	1	1	0	Mr. W. Bramley Taylor	1	1	0
Sir Thomas Stevenson ...	1	1	0	Dr. W. Douglas	1	1	0
Professor Clifford Albutt, F.R.S.	1	1	0	Dr. Charles Drage	1	1	0
Dr. John J. Nason, J.P.	1	1	0	Mr. Reginald G. Hansell	1	1	0

◆

Anxious One, in the first place, need not be anxious. Exercises steadily persevered in may develop the muscles in question but it is of no consequence if they remain small. Most advertised electrical appliances are valueless.

X. Y. Z.—If the proceedings of "Dr." B. were brought before the General Medical Council we think that his employer would probably be adjudged guilty of covering.

Erratum.—In The Lancet of August 6th, p. 426, under the heading of "Royal College of Physicians and Surgeons of Edinburgh and Faculty of Physicians and Surgeons of Glasgow," after First Examination (Four Years' Course), George Vernon Edwards, Kendley, Cheshire, should read *George Vernon Edwardes, Heatley. Cheshire.*

Communications not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (15th).—London (2 p.m.), St. Bartholomew's (1.30 p.m.), St. Thomas's (3.30 p.m.), St. George's (2 p.m.), St. Mary's (2.30 p.m.), Middlesex (1.30 p.m.), Westminster (2 p.m.), Chelsea (2 p.m.), Samaritan (Gynæcological, by Physicians, 2 p.m.), Soho-square (2 p.m.), Royal Orthopædic (2 p.m.), City Orthopædic (4 p.m.), Gt. Northern Central (2.30 p.m.), West London (2.30 p.m.), London Throat (9.30 a.m.), Royal Free (2 p.m.), Guy's (1.30 p.m.).

TUESDAY (16th).—London (2 p.m.), St. Bartholomew's (1.30 p.m.), St. Thomas's (3.30 p.m.), Guy's (1.30 p.m.), Middlesex (1.30 p.m.), Westminster (2 p.m.), West London (2.30 p.m.), University College (2 p.m.), St. George's (1 p.m.), St. Mary's (1 p.m.), St. Mark's (2.30 p.m.), Cancer (2 p.m.), Metropolitan (2.30 p.m.), London Throat (9.30 a.m.), Royal Ear (3 p.m.), Samaritan (9.30 a.m. and 2.30 p.m.), Throat, Golden-square (9.30 a.m.), Soho-square (2 p.m.), Chelsea (2 p.m.), Central London Throat and Ear (2 p.m.).

WEDNESDAY (17th).—St. Bartholomew's (1.30 p.m.), University College (2 p.m.), Royal Free (2 p.m.) Middlesex (1.30 p.m.), Charing Cross (3 p.m.), St. Thomas's (2 p.m.), London (2 p.m.), King's College (2 p.m.), St. George's (Ophthalmic, 1 p.m.), St. Mary's (2 p.m.), National Orthopædic (10 a.m.), St. Peter's (2 p.m.), Samaritan (9.30 a.m. and 2.30 p.m.), Gt. Ormond-street (9.30 a.m.), Gt. Northern Central (2.30 p.m.), Westminster (2 p.m.), Metropolitan (2.30 p.m.) London Throat (9.30 a.m.), Cancer (2 p.m.), Throat, Golden-square (9.30 a.m.), Guy's (1.30 p.m.).

THURSDAY (18th).—St Bartholor (3.30 P M) University College (2 George's (1 P M), London (2 P M) (1 30 P M) St Mary's (2.30 P M) Soho-square (2 P M) North West London (2 P M) Gt. Northern Central (Gynæcological 2.30 P M) Metropolitan (2 30 P M) London Throat (9 30 A M) St Mark's (2 P M) Samaritan (9 30 A M and 2.30 P M) Throat Golden square (9.30 A.M) Guy's (1 30 P M)

FRI

Northern Central (2.30 P M) West London (2.30 P M) London Throat (9 30 A M) Samaritan (9 30 A M and 2.30 P M) Throat, Golden square (9 30 A.M) City Orthopædic (2.30 P M) Soho-square (2 P M) Central London Throat and Ear (2 P M)

SATURDAY (20th) —Royal Free (9 A M) London (2 P M) Middlesex (1 30 P M) St Thomas's (2 P M) University College (9 15 A M) Charing Cross (2 P M) St George's (1 P M) St Mary's (10 P M) Throat Golden square (9 30 A M) Guy's (1 30 P M)

At the Royal Eye Hospital (2 P M) the Royal London Ophthalmic (10 A M) the Royal Westminster Ophthalmic (1 30 P M) and the Central London Ophthalmic Hospitals operations are performed daily

LECTURES, ADDRESSES, DEMONSTRATIONS &c

MONDAY (15th) —POST GRADUATE COLLEGE (West London Hospital Hammersmith road W) —3 P M Dr Saunders Demonstration in Medical Wards

TUESDAY (16th) —POST-GRADUATE COLLEGE (West London Hospital Hammersmith road W) —5 P M Dr Ball Middle Ear Suppuration (with lantern slides)

WEDNESDAY (17th) —POST GRADUATE COLLEGE (West London Hospital Hammersmith road W) —5 P M Dr Saunders Investigation of Headaches and their Treatment

THURSDAY (18th) —POST GRADUATE COLLEGE (West London Hospital Hammersmith road W) —4 P M Mr Armour Demonstration in Surgical Wards

FRIDAY (19th) —POST-GRADUATE COLLEGE (West London Hospital Hammersmith road W) —5 P M Mr Bidwell Malignant Disease of the Colon

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* 'To THE EDITORS and not in any case to any gentleman who may be supposed to be connected with the Editorial staff It is urgently necessary that attention be given to this notice

It is especially requested that early intelligence of local events having a medical interest or which it is desirable to bring under the notice of the profession may be sent direct to this office

Lectures original articles and reports should be written on one side of the paper only AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR AND IF POSSIBLE OF THE ARTICLE SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION

Letters, whether intended for insertion or for private information must be authenticated by the names and addresses of their writers—not necessarily for publication

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Local papers containing reports or news paragraphs should be marked and addressed ' To the Sub Editor

Letters relating to the publication sale and advertising departments of THE LANCET *should be addressed To the Manager '*

We cannot undertake to return MSS not used

MANAGER'S NOTICES.

THE INDEX TO THE LANCET

THE Index to Vol I of 1904 which was completed with the issue of June 25th, and the Title page to the Volume, were given in THE LANCET of July 2nd

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VOLUMES for the first half of the year 1904 are now ready Bound in cloth, gilt lettered, price 18*s* carriage extra

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METEOROLOGICAL READINGS

(Taken daily at 8 30 a m by Steward's Instruments)

THE LANCET Office Aug 11th 1904

Date.	Barometer reduced to Sea Level and 32° F	Direction of Wind	Rain fall	Solar Radia in Vacuo	Maximum Temp Shade.	Min Temp	Wet Bulb.	Dry Bulb	Remarks at 8.30 A.M.
Aug 5	29 95	W		123	78	64	63	68	Cloudy
6	29 99	S W		95	70	61	60	63	Overcast
7	30 06	W		122	73	57	58	62	Cloudy
8	30 17	N E		121	75	59	57	64	Fine
9	30 15	N		120	75	58	56	63	Fine
10	30 00	N		118	72	53	56	62	Cloudy
11	29 82	S W		75	63	58	56	63	Overcast

During the week marked copies of the following newspapers have been received —*Sunday Times Ross shire Journal Reading Mercury Times of India Aberdeen Weekly Free Press Daily Mail Westminster Gazette Burnley Express Globe Bradford Observer Wigan Examiner Glasgow Herald Lincoln Herald, Windsor and Eton Express Derbyshire Courier Manchester Weekly Chronicle People's Friend Darlington Echo Hull Times Yorkshire Observer Manchester Despatch Journal of Commerce, The Standard &c*

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A Presidential Address

ON

REFLECTIONS SUGGESTED BY THE NEW THEORY OF MATTER.

Delivered before the British Association for the Advancement of Science at Cambridge on August 17th, 1904,

BY THE RIGHT HON. A. J. BALFOUR, D.C.L., LL.D., M.P., F.R.S.,

FIRST LORD OF THE TREASURY AND CHANCELLOR OF THE UNIVERSITY OF EDINBURGH.

[Mr. Balfour commenced his address by remarking that since the British Association exists for the advancement of science it is well that now and again the place of gathering should be in some spot where science rather than its applications, knowledge, not utility, are the ends to which research is primarily directed and, that being so, surely no happier selection could have been made than the quiet courts of the ancient University, where "we tread the classic ground of physical discovery." After referring to "the illustrious line of physicists who have learned or taught within a few hundred yards of this building—a line stretching from Newton in the seventeenth century, through Cavendish in the eighteenth, through Young, Stokes, and Maxwell in the nineteenth, through Kelvin who embodies an epoch in himself, down to Rayleigh, Larmor, J. J. Thomson, and the scientific school centred in the Cavendish Laboratory," he proceeded :]

Now, what is the task which these men and their illustrious fellow-labourers out of all lands have set themselves to accomplish? To what end have led the "new and fruitful physical conceptions" which they have founded? It is often described as the discovery of the "laws connecting phenomena." But this is certainly a misleading and, in my opinion, a very inadequate account of the subject. To begin with, it is not only inconvenient but confusing to describe as "phenomena" things which do not appear, which never have appeared, and which never can appear to beings so poorly provided as ourselves with the apparatus of sense perception. But apart from this, which is a linguistic error too deeply rooted to be easily exterminated, is it not most accurate in substance to say that a knowledge of Nature's laws is all we seek when investigating Nature? The physicist looks for something more than what by any stretch of language can be described as "co-existences" and "sequences" between so-called "phenomena." He seeks for something deeper than the laws connecting possible objects of experience. His object is physical reality—a reality which may or may not be capable of direct perception; a reality which is in any case independent of it; a reality which constitutes the permanent mechanism of that physical universe with which our immediate empirical connexion is so slight and so deceptive. That such a reality exists, though philosophers have doubted, is the unalterable faith of science; and were that faith *per impossibile* to perish under the assaults of critical speculation science, as men of science usually conceive it, would perish likewise. If this be so, if one of the tasks of science and, more particularly of physics, is to frame a conception of the physical universe in its inner reality, then any attempt to compare the different modes in which, at different epochs of scientific development, this intellectual picture has been drawn cannot fail to suggest questions of the deepest interest. True, I am precluded from dealing with such of these questions as are purely philosophical by the character of this occasion and with such of them as are purely scientific by my own incompetence. But some there may be sufficiently near the dividing line to induce the specialists who rule by right on either side of it to view with forgiving eyes any trespasses into their legitimate domain which I may be tempted during the next few minutes to commit. Let me then endeavour to compare the outlines of two such pictures, of which the first may be taken to represent the views prevalent towards the end of the eighteenth century, a little more than a hundred years from the publication of Newton's "Principia" and, roughly speaking, about midway between that epoch-making date and the present moment. I suppose that if at that period the average man of science had been asked to sketch his general conception of the physical universe he would probably have said that it essentially consisted of various sorts of ponderable matter, scattered in different combinations through space, exhibiting most varied aspects under the influence of chemical affinity and temperature, but through

simple law. To this ponderable matter he would (in spite of Rumford) have probably added the so-called "imponderable" heat, then often ranked among the elements, together with the two "electrical fluids" and the corpuscular emanation supposed to constitute light. In the universe as thus conceived the most important forms of action between its constituents was action at a distance; the principle of the conservation of energy was, in any general form, undreamed of; electricity and magnetism, though already the subjects of important investigation, played no great part in the Whole of things; nor was a diffused ether required to complete the machinery of the universe.

Within a few months, however, of the date assigned for these deliverances of our hypothetical physicist came an addition to this general conception of the world, destined profoundly to modify it. About 100 years ago Young opened, or re-opened, the great controversy which finally established the undulatory theory of light and with it a belief in an interstellar medium by which undulations could be conveyed. But this discovery involved much more than the substitution of a theory of light which was consistent with the facts for one which was not, since here was the first authentic introduction[1] into the scientific world-picture of a new and prodigious constituent—a constituent which has altered, and is still altering, the whole balance (so to speak) of the composition. Unending space, thinly strewn with suns and satellites, made or in the making, supplied sufficient material for the mechanism of the heavens as conceived by Laplace. Unending space filled with a continuous medium was a very different affair and gave promise of strange developments. It could not be supposed that the ether, if its reality were once admitted, existed only to convey through interstellar regions the vibrations which happen to stimulate the optic nerve of man. Invented originally to fulfil this function, to this it could never be confined. And accordingly, as everyone now knows, things which, from the point of view of sense perception, are as distinct as light and radiant heat and things to which sense perception makes no response like the electric waves of wireless telegraphy,[2] intrinsically differ, *not in kind, but in magnitude alone.* This, however, is not all or nearly all. If we jump over the century which separates 1804 from 1904 and attempt to give in outline the world picture as it now presents itself to some leaders of contemporary speculation we shall find that in the interval it has been modified, not merely by such far-reaching discoveries as the atomic and molecular composition of ordinary matter, the kinetic theory of gases, and the laws of the conservation and dissipation of energy, but by the more and more important part which electricity and the ether occupy in any representation of ultimate physical reality. Electricity was no more to the natural philosophers in the year 1700 than the hidden cause of an insignificant phenomenon.[3] It was known, and had long been known, that such things as amber and glass could be made to attract light objects brought into their neighbourhood, yet it was about 50 years before the effects of electricity were perceived in the thunderstorm. It was about 100 years before it was detected in the form of a current. It was about 120 years before it was connected with magnetism; about 170 years before it was connected with light and ethereal radiation.

But to-day there are those who regard gross matter, the matter of everyday experience, as the mere appearance of which electricity is the physical basis: who think that the elementary atom of the chemist, itself far beyond the limits of direct perception, is but a connected system of monads or sub-atoms which are not electrified matter but are electricity itself; that these systems differ in the number of monads which they contain, in their arrangement, and in their motion relative to each other and to the ether; that on these differences, and on these differences alone, depend the various qualities of what have hitherto been regarded as indivisible and elementary atoms; and that while in most cases these atomic systems may retain their equilibrium for periods which, compared with such astronomical processes as the cooling of a sun, may seem almost eternal, they are not less obedient to the law of change than the everlasting heavens themselves.

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[1] The hypothesis of an ether was, of course, not new. But before Young and Fresnel it cannot be said to have been established.

[2] First known through the theoretical work of Maxwell and the experiments of Hers.

[3] The *modern* history of electricity begins with Gilbert, but I have throughout confined my observations to the post-Newtonian period.

But if gross matter be a grouping of atoms, and if atoms be systems of electrical monads, what are these electrical monads? It may be that, as Professor Larmor has suggested, they are but a modification of the universal ether, a modification roughly comparable to a knot in a medium which is inextensible, incompressible, and continuous. But whether this final unification be accepted or not, it is certain that these monads cannot be considered apart from the ether. It is on their interaction with the ether that their qualities depend and without the ether an electric theory of matter is impossible. Surely we have here a very extraordinary revolution. Two centuries ago electricity seemed but a scientific toy. It is now thought by many to constitute the reality of which matter is but the sensible expression. It is but a century ago that the title of an ether to a place among the constituents of the universe was authentically established. It seems possible now that it may be the stuff out of which that universe is wholly built.

[After referring to the origin and development of suns and the gradual dissipation of the energy which during this process of concentration has largely taken the form of light and radiant heat Mr. Balfour proceeded :]

My present purpose requires me to do no more than observe that, be the theory of the primary and secondary qualities of matter good or bad, it is the one on which science has in the main proceeded. It was with matter thus conceived that Newton experimented. To it he applied his laws of motion; of it he predicated universal gravitation. Nor was the case greatly altered when science became as much preoccupied with the movements of molecules as it was with those of planets. For molecules and atoms, whatever else might be said of them, were at least pieces of matter, and, like other pieces of matter, possessed those "primary" qualities supposed to be characteristic of all matter, whether found in large masses or in small. But the electric theory which we have been considering carries us into a new region altogether. It does not confine itself to accounting for the secondary qualities by the primary or the behaviour of matter in bulk by the behaviour of matter in atoms; it analyses matter, whether molar or molecular, into something which is not matter at all. The atom is now no more than the relatively vast theatre of operations in which minute monads perform their orderly evolutions, while the monads themselves are not regarded as units of matter but as units of electricity, so that matter is not merely explained but is explained away. Now the point to which I desire to call attention is not to be sought in the great divergence between matter as thus conceived by the physicist and matter as the ordinary man supposes himself to know it, between matter as it is perceived and matter as it really is, but to the fact that the first of these two quite inconsistent views is wholly based on the second. *This is surely something of a paradox.* We claim to found all our scientific opinions on experience; and the experience on which we found our theories of the physical universe is our *sense perception* of that universe. That *is* experience; and in this region of belief there is no other. Yet the conclusions which thus profess to be entirely founded upon experience are to all appearance fundamentally opposed to it; our knowledge of reality is based upon illusion, and the very conceptions we use in describing it to others, or in thinking of it ourselves, are abstracted from anthropomorphic fancies which science forbids us to believe and Nature compels us to employ. We here touch the fringe of a series of problems with which inductive logic ought to deal, but which that most unsatisfactory branch of philosophy has systematically ignored. This is no fault of men of science. They are occupied in the task of making discoveries, not in that of analysing the fundamental presuppositions which the very possibility of making discoveries implies. Neither is it the fault of transcendental metaphysicians. Their speculations flourish on a different level of thought; their interest in a philosophy of nature is lukewarm; and howsoever the questions in which they are chiefly concerned be answered it is by no means certain that the answers will leave the humbler difficulties at which I have hinted either nearer to, or further from, a solution. But though men of science and idealists stand acquitted the same can hardly be said of empirical philosophers. So far from solving the problem they seem scarcely to have understood that there was a problem to be solved. Led astray by a misconception to which I have already referred, believing that science was concerned only with (so-called) "phenomena," that it had done all that it could be asked to do if it accounted for the sequence of our individual sensations, that it was concerned only with the "laws of Nature" and not with the inner character of the physical reality; disbelieving, indeed, that any such physical reality does in truth exist; it has never felt called upon seriously to consider what are the actual methods by which science attains its results and how those methods are to be justified. If anyone, for example, will take up Mill's logic, with its "sequences and coexistences between phenomena," its "method of difference," its "method of agreement," and the rest; if he will then compare the actual doctrines of science with this version of the mode in which those doctrines have been arrived at he will soon be convinced of the exceedingly thin intellectual fare which has been hitherto served out to us under the imposing title of Inductive Theory. There is an added emphasis given to these reflections by a train of thought which has long interested me, though I acknowledge that it never seems to have interested anyone else. Observe, then, that in order of logic sense perceptions supply the premisses from which we draw all our knowledge of the physical world. It is they which tell us there *is* a physical world; it is on their authority that we learn its character. But in order of causation they are effects due (in part) to the constitution of our organs of sense. What we see depends, not merely on what there is to be seen, but on our eyes. What we hear depends not merely on what there is to hear, but on our ears. Now, eyes and ears, and all the mechanism of perception, have, as we know, been evolve in us and our brute progenitors by the slow operati of natural selection. And what is true of sense percepti is, of course, also true of the intellectual powers whi enable us to erect upon the frail and narrow platform whi sense perception provides the proud fabric of the science Now natural selection only works through utility. encourages aptitudes useful to their possessor or his speci in the struggle for existence, and, for a similar reason, it apt to discourage useless aptitudes, however interesting th may be from other points of view, because, being useless, th are probably burdensome.

But it is certain that our powers of sense perception and calculation were fully developed ages before they we effectively employed in searching out the secrets of physic reality—for our discoveries in this field are the triumphs b of yesterday. The blind forces of natural selection, which admirably simulate design when they are providing for present need, possess no power of prevision and could nev except by accident, have endowed mankind, while in t making, with a physiological or mental outfit adapted to t higher physical investigations. So far as natural scien can tell us every quality of sense or intellect which does n help us to fight, to eat, and to bring up children is but by-product of the qualities which do. Our organs of sen perception were not given us for purposes of research, n was it to aid us in meting out the heavens or dividing t atom that our powers of calculation and analysis wer evolved from the rudimentary instincts of the animal. I is presumably due to these circumstances that the beliefs o all mankind about the material surroundings in which i dwells are not only imperfect but fundamentally wrong. It may seem singular that down to, say, five years ago our race has, without exception, lived and died in a world of illusions and that its illusions, or those with which we are here alone concerned, have not been about things remote or abstract, things transcendental or divine, but about what men see and handle, about those "plain matters of fact" among which common-sense daily moves with its most confident step and most self-satisfied smile. Presumably, however, this is either because too direct a vision of physical reality was a hindrance, not a help, in the struggle for existence, because falsehood was more useful than truth, or else because with so imperfect a material as living tissue no better results could be attained. But if this conclusion be accepted its consequences extend to other organs of knowledge besides those of perception. Not merely the senses, but the intellect, must be judged by it and it is hard to see why evolution, which has so lamentably failed to produce trustworthy instruments for obtaining the raw material of experience, should be credited with a larger measure of success in its provision of the physiological arrangements which condition reason in its endeavours to turn experience to account. Considerations like these, unless I have compressed them beyond the limits of intelligibility, do undoubtedly suggest a certain inevitable incoherence in any general scheme of thought which is built out of materials provided by natural science alone. Extend the boundaries of knowledge as you may; draw how you will the picture of the universe; reduce its infinite variety to the modes of a single space-filling ether; retrace its history to the birth of existing atoms; show how under the pressure of gravitation they became concentrated into nebulæ, into suns, and all the host of heaven; how, at least in one small planet, they combined to form organic compounds; how organic compounds became living things; how living things, developing along many different lines, gave birth at last to one superior race; how from this race arose, after many ages, a learned handful, who looked round on the world which thus blindly brought them into being, and judged it, and knew it for what it was:—perform, I say, all this and though you may indeed have attained to science in nowise will you have attained to a self-sufficing system of beliefs. One thing at least will remain, of which this long-drawn sequence of causes and effects gives no satisfying explanation—and that is knowledge itself. Natural science must ever regard knowledge as the product of irrational conditions, for in the last resort it knows no others. It must always regard knowledge as rational or else science itself disappears. In addition, therefore, to the difficulty of extracting from experience beliefs which experience contradicts, we are confronted with the difficulty of harmonising the pedigree of our beliefs with their title to authority. The more successful *we are in explaining their origin the more doubt we cast on* eir validity. The more imposing seems the scheme of hat we know, the more difficult it is to discover by hat ultimate criteria we claim to know it. Here, how-er, we touch the frontier beyond which physical science ssesses no jurisdiction. If the obscure and difficult region hich lies beyond is to be surveyed and made accessible, ilosophy, not science, must undertake the task. It is no isiness of this society. We meet here to promote the use of knowledge in one of its great divisions; we shall t help it by confusing the limits which usefully separate e division from another. It may, perhaps, be thought that have disregarded my own precept, that I have wilfully verstepped the ample bounds within which the searchers to nature carry on their labours. If it be so, I can only eg your forgiveness. My first desire has been to rouse in ose who, like myself, are no specialists in physics the same bsorbing interest which I feel in what is surely the most r-reaching speculation about the physical universe which s ever claimed experimental support, and if in so doing I ve been tempted to hint my own personal opinion that as atural science grows it leans more, not less, upon an lealistic interpretation of the universe even those who least gree may, perhaps, be prepared to pardon.

ROYAL CORNWALL INFIRMARY, TRURO.—The 05th annual report of this institution, which has just been issued, states that 392 in-patients were admitted during 1903, being seven less than in the previous year. The out-patients numbered 876, as compared with 937 in 1902. The average daily number of in-patients was 35, the average stay of each being 33 days. The cost per bed per annum was £58 16*s.* 11*d.*, an increase of over £4 as compared with the preceding year. The financial statement showed that the income was £2014 and the expenditure £2059.

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A Post-Graduate Lecture

ON

THE PATHOLOGY AND TREATMENT OF THE HERNIÆ OF CHILDREN AND THEIR RELATION TO CONDITIONS IN THE ADULT.

Delivered at the Hospital for Sick Children, Great Ormond-street,

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[illegible] S OF ENGLAND.

GENTLEMEN,—In selecting a subject for this lecture I have been desirous of bringing to your notice some points in connexion with some common disorder such as may be seen and tested almost on every day of practice. One of the most frequent ailments seen in the out-patient department has been taken for the material of this lecture. An endeavour has been made to throw light upon the origination, the treatment, and the after-effects upon adults. In this way I hope to convince you that childhood is the time when an operation has the best chance of curing a hernia, as then, and then only, is the surgeon's skill aided by nature in the subsequent growth of the subject. Childhood is the period when we may hope to do a little more than "put back the hands of the clock." We may be able to do a good deal towards the local "winding up again of that clock."

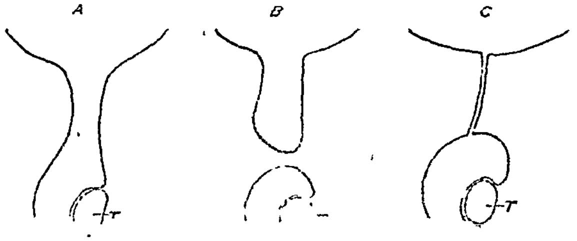
Amongst the out-patients who attend the practice of a hospital for children there are a large number of cases of hernia and so I have selected this opportunity of bringing before you several points of interest in their pathology and treatment which are largely new. It requires but little discrimination to see that there are two great factors in the production of herniæ in children. One, a predisposing condition is a congenital malformation by means of which the tunic [illegible] in co [illegible] sac, [illegible] viscera as can migrate. The second factor, the one which actively produces the hernia, is the association of herniæ in children with gastro-enteritis, or better, gastro-intestinal fermentation with the *production of gas*, the *consequent* distension of the abdomen and the increase of intra-abdominal pressure: As a result the weaker parts of the abdominal wall yield, one or more hernial protrusions appearing. It is quite common to see multiple herniæ in children, such as inguinal and umbilical, which are the consequences of this distension. The large hyper-resonant abdomen and the multiplicity of the results obviously point to the general rather than the local character of the method of the origination of these protrusions. The presence of rickets, the passage of offensive stools, &c., indicate the incapacity of the child to digest its food, whether the fault lies with the child, the food, or both.

THE HERNIÆ AND HYDROCELES OF CHILDREN.

In order to illustrate the relative importance of these two factors, the predisposing or passive and the active, I wish to call your attention *to the following points*. The first deals with respect to the very great frequency of the presence of a communication between the tunica vaginalis and the peritoneal cavity—i.e., the congenital hernia sac—which exists in the condition recognised as hydroceles in children (see Fig. 1). Careful inquiry or the direction of the mother's attention will reveal the fact that the hydrocele is less tense in the morning than it is at night—that is to say, after the child has been lying quietly and some o [illegible] through a communication fro [illegible] peritoneal cavity, the scrotal [illegible] again, the more frequently and [illegible] is looked for during the *course of an operation the more frequently it* is found. The presence of this strait or neck can be demonstrated, as a distinct thickening in the cord of that side, in the out-patient room.

Yet again, recent herniæ in adults are found to have congenital sacs. Therefore, the presence of a communication between the tunica vaginalis and the peritoneum alone is insufficient to cause the formation of a hernia. It would therefore seem, as would be expected, that the increase of intra-abdominal pressure, the active factor, is more important than the predisposing malformation. Again, when operating on the herniæ of young children the observer cannot but be impressed by the frequency of the occurrence of sacs of acquired or recent origin—i.e., unconnected with the tunica vaginalis. These considerations have led me to place the greatest importance on the gastro-intestinal fermentation in the causation and the production of herniæ in children and to look upon congenital malformations of the tunica vaginalis as merely important conditions predisposing thereto. Upon this view the importance of dietetics for the prevention of gastro-intestinal disturbances is still further emphasised. The relation of these infantile hydroceles to herniæ and gastro-intestinal troubles is one of the greatest importance, the result casting a lurid light upon the rationale of painting the scrotum with discutients in order to cure imperfections of digestion and the hernia sac of the hydrocele. Some observers have demonstrated the existence of fluid in the abdomina of children the subjects of hydroceles. The fact that these hydroceles are in hernia sacs, potentially so if they have never actually contained an abdominal viscus, demands that the treatment should be that of herniæ, which will be mentioned later, and demonstrates the utter futility of scrotal discutients.

FIG. 1.



A, Congenital hernial sac. B, Acquired hernial sac. C, Infantile hydrocele. T, Testicle.

HERNIÆ AND PHIMOSIS.

To students of text-books and recent monographs it will be at once apparent that no notice as yet has been taken of the almost universal and the most popular notion of the importance of phimosis in the causation of the herniæ of children. That such may be the case in some instances cannot be denied. But I have rarely seen a case in which I could satisfy myself that such was in reality true. The urinary opening in the prepuce is rarely so small as to be of such paramount importance. Also, in such a condition the prepuce itself would become ballooned and distended with urine during the act of micturition. Such a phenomenon would hardly be unnoticed by the mothers. Yet I have never been able to obtain such a history. Hence, with regard to the importance of phimosis in hernia production, it may be affirmed that, from the evidence before us, the prepuce is a much maligned structure and the operation of circumcision in this connexion one which raises false hopes. The operation by itself is certainly very rarely followed by any improvement in the condition of the hernia. Circumcision must be combined with other treatment, and though an operation and therefore of great importance in the eyes of the friends and the public, it should be pointed out that it is only of secondary value as compared with diet, medicine, &c. Doubtless this small operation is practised far more often than is necessary. In most cases it may be regarded in the light of a procedure of expediency rather than one of necessity. If more attention were paid it would be noticed that a small meatus urinarius in the small glans penis is very often associated with a tight prepuce and is the true cause of the child's straining during the act of micturition.

THE ADVANTAGES, DISADVANTAGES, AND THE VALUE OF TRUSSES.

To extend the above arguments further and so cover more fully the subject of hernia production in children it may be pointed out that it is the continuance or persistence of the increase of the intra-abdominal pressure, such as that arising from gastro-intestinal fermentation, which gives rise to the formation of a hernia rather than the sudden and more violent increments of pressure which arise from muscular efforts and strainings. In an adult the conditions seem rather to be reversed, as will be pointed out later.

The next point which I wish to bring before you is the curability of herniæ by means of a truss. The truss has long been a popular remedy for ruptures, and especially those of children. But it has not been made at all clear how this result is brought about. So far as can be ascertained it can cause matting of the tissues about the neck of the sac by means of the pressure which it exerts. And perhaps in a few instances it may also cause obliteration of the canal of the neck of the sac by means of the formation of peritoneal adhesions. The situation of these adhesions will be well below the level of the peritoneum and therefore will at best be comparable to the bad application of a ligature to the sac. Besides, by preventing the descent of abdominal viscera it will prevent further distension of the sac and enable natural growth to assist in, and perhaps perpetuate, the "cure."

The most popular truss for babies and young children is the one constructed out of a skein of wool. It requires but little experience of it to demonstrate the general inefficacy of this form of truss. Still, it is of some use. The pressure of this soft truss is quite insufficient to bring about the obliteration of the channel of communication in the neck of the sac. So that there can be no hope of curing the hernia by means of the formation of adhesions—that is to say, according to the ordinarily accepted method as delineated above. The second favourite is a spring truss which consists of a girdle and a pad, somewhat like those used on adults. There are two main objections to the use of this truss. First, the child is growing and the truss never fits for any length of time, having to be replaced by a new one. Secondly, as its pressure will be exerted on the structures of the spermatic cord as well as on the neck of the hernia, it will cause injury to the testis. Trusses used by adults occasionally give rise to orchitis in a subacute form; more commonly to fibrosis of the testis, which is the result of obstruction to the venous return. But the question assumes quite a different aspect when dealing with the interference with the blood-supply of a developing gland tissue such as that of the testis of a child. Orchitis, atrophy, and hardening by fibrosis, which will cause growth in the organ to cease, have been illustrated by cases among the out-patients. The importance to the individual of the testes before puberty has been strongly insisted upon in the lecture which I gave here in October, 1903.[1] And as the subject is one the importance of which has never been appreciated, it is yet again insisted upon. The value of the testes from the point of view of continuance of the race lies in their capacity for spermatogenesis. But, especially for the individual, there is another factor—namely, the perfecting rather than the origination of the male characteristics, the so-called secondary sexual characters, such as the male form and strength of body, the beard and moustache, the voice, &c., which are supposed to need for their perfecting some internal secretion of the testicle. If one studies people with imperfectly descended testes the conclusion that one must come to is that the perfection of the male characters may be estimated by the amount of perfect testicular tissue present. Many surgeons have referred in a light vein to the apparent prodigality of nature in the presence of bilateral organs in the male when one will insure the perpetuation of the race. The whole question turns on the fact that the production of spermatozoa is but one of the functions of the testicle. It is the external secretion. It is a fact amply proved that the presence of one good testis will insure spermatogenesis, and a little further study will convince the observer that the early atrophy of one testis will lead to some imperfection of the male peculiarities, such as deficiency of the growth of hair on the face, the high-pitched voice, &c., and the earlier the age at which the atrophy occurs the more marked will be the deficiences. After puberty—i.e., when once these characters are developed—they seem to be more or less permanent, no matter the subsequent conditions of the testes.

From the above it will be seen that considerable evil may result to the individual from the application of a too forcible truss, on account of its interference with the blood supply *of the delicate tissue of the growing testis* This being so it seems that it will be impossible to cure a hernia which has a congenital sac, that is to say one in which the tunica vaginalis and the peritoneum are continuous by means of a truss which will cause no injury to the testis unless the natural separation of these structures which normally occurs before birth is merely belated Yet it is known that a number of the herniæ in children disappear and are cured What is the explanation?

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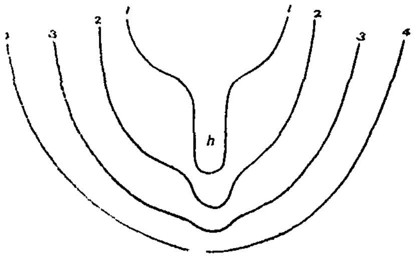
[1] Brit. Med. Jour., June 4th, 1904.

From what has been said above it may be presumed that the herniæ which are cured have not congenital sacs, these being apparently incurable short of operation And our experience at the operating table has already led us to *believe that acquired sacs are a great deal more frequent in* childhood than is supposed It may therefore be suspected that the cases in which the hernia becomes cured are instances in which the sac has been of acquired origin It is possible though improbable that these sacs can be cured by the obliteration of the neck of the sac by means of a truss, the pressure of which is such as not to injure the testis But it struck me that there was another possible and probable explanation for this fact and one which was of more extensive application

The acquired hernia sac of children is produced largely if not entirely by the increased abdominal pressure caused by gas formation due to fermentation in the intestines When this fermentation subsides under treatment or otherwise the original cause of the protrusion ceases to exist Now, as the child grows the concurrent increase in size and capacity of the body will lead to the retraction of the acquired hernia sac into the abdomen in this way it may be pulled right up and the hernia cease to exist (see Fig 2) The absence of a sac in the internal abdominal ring and the non protrusion viscera will enable that ring to grow normally and correctly the growth correcting the deformity which has resulted from the hernia, exactly as it does in the case of the curvatures of bones It is, in the nature of things, not easy to bring forward positive or direct evidence in favour of this hypothesis and I merely indicate the sources of evidence from which the conclusions was drawn

FIG 2



To illustrate the retraction of *h* an acquired hernial sac during successive phases (1 2, 3 4) of the growth of the child

1 I have seen the apparent complete disappearance of inguinal hernia in a child in which the testis was quite separate from the hernia, presumably therefore, the sac was an acquired one This I have seen occur in cases treated both with and without the use of a truss Cure has been seen in both sexes

2 *I have operated upon a case in which there has been* a most distinct history of a hernia in childhood without finding any trace of it This case was that of a woman between 25 and 30 years of age who had been advised to undergo an operation on the supposition that a hernia was then present No sign of its presence could be detected and operation was performed in order to satisfy the patient s mind A careful examination at the operation yielded no trace of the presence of a sac in the inguinal canal What had become of the sac? My contention is that growth had drawn it up into the abdomen The descent of the bladder and the uterus into the pelvis, which are in the abdomen in the child will also play some part in the natural reduction of a hernia in the female sex during the period of growth

3 I have more than once operated upon the varicoceles of young men who had, so far as can be proved, a certain history of having had a hernia when children and at the operation no trace of the existence of a sac could be found In these cases the hernia had only been present up to an early age and they contrast well with the following case, in which the hernia persisted for six or seven years

4 In St Thomas s Home I operated upon a man, aged 21 years for the radical cure of an inguinal hernia which had appeared within the last few weeks He gave a very definite history of having had a hernia in the same situation from the age of one year until between those of seven and eight—that is to say for a period of between six and seven years From this age until quite recently for a period of 14 years the rupture was cured ' Then a hernia of *smaller dimensions as far as its relations with the scrotum* were concerned made its appearance At the operation the sac was thin and easily separated from the structures of the spermatic cord showing all the evidences of its being of recent origin It was of the acquired variety, having no connexion with the tunica vaginalis There was no trace of the former sac Where had it disappeared to?

The above cases offer some evidence in favour of the suggestion of the disappearance and retraction of acquired hernia sacs during the period of growth But if my suggestion of the natural cure of acquired hernia sacs by these means is true a somewhat similar occurrence should take place when there is a congenital sac—that is to say, when the tunica vaginalis and the peritoneal cavity are in communication so causing the late appearance of imperfect descent of the testis Upon this I can say but little but I have distinctly obtained the history that a boy s testicle was in its proper place when a baby, but later it had become imperfectly descended It cannot be assumed that this was the natural result of growth though I can add the further evidence that at the operation the imperfectly descended testis was accompanied by a congenital hernia sac This distinctly suggests the explanation which has been offered, natural growth retracting into the abdomen the hernia sac, and at the same time offers another example of the new class of acquired or secondarily imperfectly descended testes

If these views are accepted there must be a considerable modification of our methods of treatment There are two main lines to be followed, as indicated in the passive or predisposing and the active agents in the formation of herniæ In the first place to deal with the great predisposing factor in the formation of herniæ in children, we cannot prevent the occurrence of congenital malformations As trusses are likely to be useless in this instance, if not mischievous nothing short of operation is likely to cure a hernia which has a congenital sac It is the hernia with the acquired sac which offers more scope for success in non operative treatment The factor in the production of these is the active one—namely, the increase of intra abdominal *pressure due to gastro intestinal fermentation* Hence the value of the diagnosis as to which sac is present Naturally, the real treatment of the case should be relegated to the physician as that of the surgeon consists of merely preventing the hernia coming down by the use of a woollen or other light truss and the recumbent position if necessary By attention to the diet the physician can do a great deal towards both the cure and the prevention of herniæ With an acquired sac the treatment must first consist of attention to diet the administration of purgatives and other intestinal cleansing agents combined with recumbency and the use of a truss of a light description The public will have to be educated to the fact that herniæ in children may require rest in bed as much as do more acute and apparent illnesses With the above *treatment a considerable number of herniæ* of children with acquired sacs can be cured in a natural manner by the growth of the child

THE DEFORMITY OF THE INTERNAL ABDOMINAL RING CONSEQUENT UPON THE PRESENCE OF A HERNIA DURING CHILDHOOD

The next question to be considered is How long and up to what age should this treatment be continued? To shed light upon this point a very interesting case can be brought forward which admirably illustrates the malformation of the internal abdominal ring which results from the prolonged presence within it of a hernia during the period of growth

An athletic and strongly made man, aged 21 years had had a rupture from *the age of one year until between the a* of seven and eight—that is to say, for a period of between six and seven years during the time of active growth of the body. For 14 years he remained quite cured and came to me at the age of 21 years on account of the recent appearance of a hernia at the same place. The size and the condition of the hernial sac confirmed the history of its recent origin and have been already detailed. The second stage of the operation, the suture of the internal abdominal ring, was *not at all easy*. It was this difficulty which attracted my attention to the condition. The shape of the hernial opening was more or less circular, whilst it should have been slit-like, allowing of valvular closure of the inguinal canal by the contraction of the abdominal muscles, which protective condition was in this instance impossible. And the fact that the patient had had 14 years of freedom from the rupture was entirely due to his naturally strong tissues rather than to any safeguarding mechanism of his inguinal canal. Considerable difficulty was experienced in effecting closure of the internal ring and a stronger silk than usual had to be used for it. The rest of the history of the case has been one of perfect success so far and only interests the patient, his friends and relatives, and myself, so that no more details will be given.

FIG. 3.

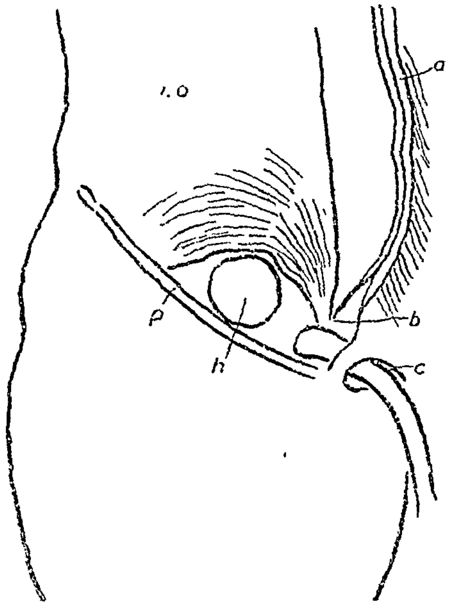


Illustration of the deformity of the internal abdominal ring caused by the presence of a hernia for 7 years during childhood—i.e., the period of growth. I. O., Internal oblique muscle. *a*, Flap of external oblique muscle. *b*, Conjoined tendon. *c*, External ring. *h*, Hernial orifice at internal ring. *p*, Poupart's ligament.

The great interest of this case lies in the interpretation of the deformity of the internal abdominal ring. The obvious suggestion is that it is dependent upon the presence of a hernia passing through it for a period of from six to seven years (see Fig. 3). The fact that the rupture occupied it would have prevented the ring from "growing straight." The relative growths of the internal abdominal ring and "the hole in it for the rupture" would be unequal, as the former would increase in size *pari passu* with the growth of the body, whilst the latter would become smaller until the hernia was "cured." At the time of the final disappearance of the hernia there would be left a relatively small hole within the internal abdominal ring, more or less circular in outline, perhaps with rather hard and unyielding edges. Consequently a distinction is made obvious between the internal abdominal ring and the aperture in it which serves for the passage of the hernia. This difference is not met with in the ordinary acquired herniæ of adults or in the congenital herniæ of young children. Correlated with this there is a development of a few fibres of the internal oblique attached to the part of Poupart's ligament below the limit of the usual origin of that muscle. The internal abdominal ring and the "aperture hernia" then seem to be the same.

this case I have operated upon a boy in the for Sick Children, Great Ormond-street, nearly eight years of age, who had inguinal hernia which had "not been properly cured since birth." At the operation he was found to have an acquired hernial sac, and there was a similar though naturally less marked deformity of his internal abdominal ring. On looking through my notes for cases in which difficulty had been encountered in suturing the internal abdominal ring I found another case in which there had been a persistent hernia during the period of growth. It would therefore seem that this malformation is quite well marked and in certain degrees may be easily recognised. The existence of such a malformation (which completely abolishes any valvular and protective action on the part of the muscles which enter into the formation of the inguinal canal) and its consequences, *point very plainly to the fact that there should be* a recognised limit to the non-operative treatment of hernia during the period of active growth before the deformity will have become permanent, as it is not right to continue a treatment which will lead to a permanent deformation of the internal abdominal ring and perhaps to the formation of a hernia later in life. There may also be mentioned from the surgeon's point of view, as later the case will be very likely to come into his hands, that there is the resulting difficulty in suturing the internal abdominal ring owing to the unyielding character of the margins of the hernial aperture, and therefore the performance of a satisfactory "radical cure" becomes difficult. The contemporaneous existence of a gross pathological process during the period of active growth and the consequent results of its action on the latter constitute a most important feature in the surgical diseases of children.

TREATMENT.

For the treatment of the herniæ of infants or children I would suggest the following lines :—

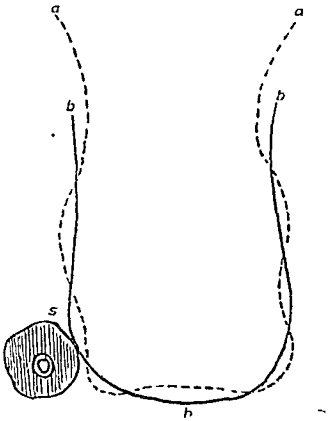
1. Treat with dieting, rest in bed if necessary, a light truss, and grey powder or the like, all herniæ up to the age of four or five years. The selection of this time is quite arbitrary and the proper age limit must be selected for each individual subject. Female children can naturally be treated with more effective trusses than male. Exceptions must be made of the following: (*a*) large or uncontrollable herniæ; (*b*) irreducible, perhaps difficult reducible or incarcerated, herniæ; and (*c*) strangulated herniæ. In these it is better not to delay operative procedures. Many of the difficult reducible herniæ of children are caused by the cæcum on the right side sliding into the hernia sac without a complete peritoneal investment. This condition is called hernia *en glissade*.

2. At the age of four years or thereabouts all herniæ of children should be submitted to operation unless there are special circumstances. Particular mention may be made of: (*a*) those with a congenital sac (the operation is now performed at the age of election); (*b*) those with an imperfectly descended testis; and (*c*) those which have been, and apparently will be, persistent in character.

It may be added that this age, four or thereabouts, has been selected as the least in the way of operative interference is then required, the internal abdominal ring will grow correctly afterwards, it is easier to perform the operation at this age than earlier, and finally, I believe that the most radical operation—i.e., with the best prognosis—can be done then which the subject's tissues will ever permit, nature, solely during the period of growth, aiding the process for cure. An eminent surgeon has claimed that the operation of cure for hernia merely puts back "the hands of the clock" as regards that condition. At the age for operation which is being advocated more can be done, as subsequent growth will aid in the cure and help to give permanence to the surgeon's work.

There are two points in the operation to which attention may be directed. The usual method of dealing with the sac is to strip it up and ligature the neck, after having divided it if a congenital one. Such a procedure is not without danger to the vas deferens and the spermatic veins such as might lead to results which may cause cessation of growth and development in the testicle. It is therefore not always advisable to adopt the ordinary method, and to meet the difficulty I have adopted the following measures. The sac is opened longitudinally and any contents therein are returned to the abdomen. A purse-string suture is carefully inserted, taking only the sac wall, as high up as is practicable. This is then tied occluding the opening of the sac. The hernia sac or the tunica vaginalis is left as widely open as possible. The question as to whether it is desirable or not to open up the inguinal canal and suture the internal abdominal ring seems to depend upon the size and the persistence of the hernia and the age of the child. The larger the hernia, the longer the history of its presence, the older the child—all indicate the advisability of the suturing of the internal abdominal ring. It may be laid down that when there is any doubt as to the performance of this step in the operation it had better be done. No harm but only good is likely to result locally.

FIG. 4



Illustrating method of ligation of the sac. *a, a*, Represent ligature passed. *b, b, b*, The sac. *s* Is the spermatic cord.

RELATIONSHIP BETWEEN THE HERNIÆ OF CHILDREN AND ADULTS

There must be some relation between the herniæ of adults and those of children. This is a subject about which there is as yet but little known. It is quite recognised that people who have had herniæ as children sometimes have a recurrence later in life, as was so in the case which has been quoted at some length in this lecture. Adults who have had hernia when young and who have no further trouble do not come under our observation and therefore we know far less about them. But this latter class must in reality be a fairly large one. One would expect that it would be mainly derived from those cases in which the hernia was present only in the early months of life, was only in evidence for a short time, and had an acquired sac. In point of fact, the *earlier the appearance* and the shorter *the duration of the* existence of a rupture the more likely it is to be cured by natural means.

As a contrast to these there are instances in which the hernia appeared late in childhood or persisted until that time. It is the persistence of the rupture which leads to the permanent deformity of the internal abdominal ring, a result which need never occur if only the hernia is treated actively by operation at an early age. And on this account it seems advisable that ruptures in children—i.e., during the period of active growth and before heavy muscular strains are indulged in—should not be left too long. For generations there has been a cry that surgery should aid nature. During childhood is the only time at which the surgeon has nature to help him in his attempts to cure herniæ. Hence it seems that this will be the time of life when the prognosis will be the best and should be the age of election for the success of an operation. Throughout I would urge the advisability of the diagnosis being made between the congenital and the acquired sacs of herniæ. It seems more than doubtful if the former—congenital sacs—can ever be cured by any measures short of "division and ligature" of the sac, whilst, as has been pointed out, those with the acquired sacs have a very fair chance of being permanently cured by the purely natural means of healthy growth and should only be interfered with operatively for their persistence, their size and incontrollability, their developing acute symptoms, or for any special reasons, such as the presence of an imperfectly descended testis, &c.

To return to those herniæ which have congenital sacs. At present there is little evidence that the canal of the neck of the sac ever becomes obliterated by a natural process which has been delayed, such as that which normally occurs before birth. Personally, I firmly believe that such a belated natural process does occur, and for evidence of it I would instance the cure of the hydroceles of babies which originally have patent communications with the peritoneum. Of course, this is no direct proof, but it affords some basis upon which one can rest an act of philosophic faith. If this communication persists up to the "age of election," from four to five, the case of hydrocele had better be operated on just as if it was a hernia. Nor is it right to use a truss which exerts sufficient pressure on the neck of the sac to lead to its closure by means of the formation of peritoneal *adhesions on account of the fact that the self same pressure* will act also on the nutrient vessels of the developing testis, and so cause such pathological changes as will hinder or entirely prevent the future perfecting of that organ.

There is yet another problem to which attention must be directed. Can the abdominal distension of a child if it persists exert any deleterious action upon the hernial regions during their growth, short of the actual formation of a hernia, which can predispose to such a development in the adult? Long-continued abdominal distension during the period of growth may bring about a lax and weakly condition of the region of the hernial rings. And I cannot help thinking that the seeds of future hernia formation are sown during infancy and childhood far more often than we suspect. We are all familiar with the large, loose, lax inguinal rings of adults so frequently found in which no definite herniæ are felt. How is it that these rings come to be so large? Is it because they are congenitally so? or is it that they are the result of persistent distension of the abdomen during childhood? There seems no doubt but that we *must favour the* latter hypothesis, though the *former may* be true in some rare instances. These large rings have a counterpart in the divarication of the recti so often seen in children with distended abdomina. Persistent abdominal distension in children will lead to the abolition of the protective valvular muscular arrangement of the inguinal canal, which condition may persist in adults and lead to the subsequent formation of herniæ.

It is to be hoped that the subject of the relationship which exists between persistent abdominal distension or the actual occurrence of hernia during infancy and childhood and the herniæ of adults has been clearly put before you so that the question may receive more attention in the future than it has done in the past. And let us hope that medicine and surgery in childhood will do much to abolish these complaints in the adult. It is curious, or better, unusual, that in a lecture on surgery medicine should be so strongly advocated. But anyone who attends upon our out-patient department will not be able to resist the conclusion that intestinal distension by the gases formed by fermentation is the most important factor in the actual production of a hernia in a child and, let us suggest, possibly also in the adult. A similar relation may, and probably does, exist between the hydrocele of a child and the hernia of the adult in a lesser degree.

To sum up, this lecture has been utilised to urge upon you the possibility, if not the fact, that if only more attention is paid to the diet and the persistence of abdominal distension of children, the advisability or not of operative interference for all herniæ in children which are persistent or of which the subjects are above the age of five years, the diagnosis between the acquired and congenital hernia sac, and active treatment adopted during childhood, far fewer adults will be handicapped by that common disadvantage—namely, a hernia.

UMBILICAL AND VENTRAL HERNIÆ

Finally, before this lecture is concluded, reference must be made to the umbilical and ventral hernia of children which illustrate admirably in a form which will be readily accepted many of the points, problems, and principles which I have advocated with inguinal herniæ. To begin with, the fact that these herniæ—umbilical and ventral—are correlated causally with persistent distension of the abdomen will be more readily agreed to than it is in the case of those in the inguinal region. Also, it is well recognised that if the distension is relieved and no visceral protrusions are allowed to occur these herniæ may be cured. And I think that people will be more ready to accept my suggestion that the growth of the trunk retracts the peritoneal sac of the hernia within the abdomen and so "cures" the rupture in a natural way. The views put forward and derived from a study of inguinal herniæ, in point of fact, seem more likely to meet with acceptance in their application to the umbilical and ventral protrusions. In the latter situation the full force of the evil of the persistence of the hernia will be appreciated and also the necessity for operation before permanent deformity has been inflicted on the ring by the rupture. Likewise the natural cure and the restoration of the umbilical ring to its proper condition will meet with ready acceptance. It is merely necessary to point out that these herniæ exemplify all the points put forward in a previous section of the lecture. But it is advisable to point out one difference which umbilical herniæ exhibit. These ruptures are merely local manifestations of the effects of abdominal distension. The divarication of the recti muscles is another and one which always accompanies them, corresponding when alone to the large inguinal rings without herniæ, which, I have suggested, arise from abdominal distension and divarication in those situations. As a consequence, when operating for umbilical herniæ it is advisable to continue the suturing well above and below the navel, so as to do more than close merely the local manifestation.

ELECTROCUTION ON THE RAILWAY: THE DANGERS OF THE LIVE RAIL.

By THOMAS OLIVER, M.A. DURH., M.D & LL.D. GLASG., F.R.C.P. LOND.,
PHYSICIAN TO THE ROYAL INFIRMARY, NEWCASTLE-UPON-TYNE.

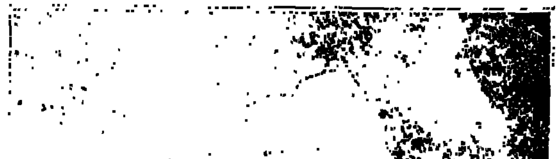
RECENTLY the attention of the public has been directed to the dangers of electric traction by the loss of life, human or other, that has been taking place upon our railways. Within the last few weeks the danger of the live rail has been made the occasion of questions in the House of Commons. On the Southport railway a short while ago a man met with his death through stepping upon the elevated rail; in the neighbourhood of Newcastle-upon-Tyne one child, three men, and numerous dogs have been killed by contact with the dangerous rail; while in other instances severe injuries have been received and death just averted as in the case about to be reported. There is not the least doubt as to the great advantages of electric traction upon the railway as a rapid and pleasant means of transport and few of us would like to see it altered, but it is quite apparent from the number of accidents which have already taken place that a sufficient protection is not afforded the public against its dangers. People will cross railway lines and animals will stray on to them. As the accidents just mentioned occurred in broad daylight, when people had all their senses to guide them, it is painful to contemplate what may be the dangers to human life during the long winter nights unless additional means are taken to inclose the elevated rail. It is no excuse on the part of a railway company to say that the people who met with their death thus on the railway were trespassing, for all the men who were killed were not guilty of this offence. In two instances the men, one of whom was provided with special boots, were railway servants, and even in cases where it is admitted that the victims were trespassers no such plea as that put forward by a railway company can altogether condone the fatal result since death is surely not, humanly speaking, the penalty of trespassing.

For the opportunity of publishing the notes of the following case I am indebted to Dr. R. A. Wilson of Wallsend, with whom I have seen the patient on two occasions.

On the afternoon of June 13th, 1904, rather a wet day, a man, aged 37 years, in crossing the line at Wallsend tripped upon the ordinary line and falling upon the current rail he struck the back and right side of his head. He was immediately rendered insensible. As the accident was seen by one of the railway servants this man at once put on india-rubber gloves and running to the rescue of the patient he pulled him off the track. The injured man was extremely rigid; his mouth was clenched and had to be opened forcibly by means of a piece of wood. Five or six minutes after the accident Dr. Wilson, who lives in the immediate vicinity, was on the spot. The man was then lying on the side of the railway; he was unconscious and was the subject of general convulsions. His jaws were firmly clenched; his eyes were fixed and staring, pupils normal and equal. The respiration was quickened but not deep. In the urgency of the moment the condition of the pulse was not registered. Artificial respiration, which had been begun, was maintained. For fully half an hour the patient remained in a state of unconsciousness, then there was a slight recovery followed by a relapse and a recommencement of the convulsions. Meanwhile a stretcher was procured. On the way to the man's home the convulsive movements were so severe that he frequently all but fell out of the ambulance. When the patient came to himself one and a half hours later there was complete anæsthesia; he had no feeling in any part of his body. As sensation returned his feelings were at first unpleasant. He complained of "pins and needles" all over him; this lasted for ten minutes. He was not sick but he felt dizzy and strange. Two hours after the accident he complained of pain in the right foot. On removing the boot the upper surface of the large toe and of that adjoining it was seen to be blistered; it was also red and angry looking. A large blister was also noticed on the heel. There was no difficulty with the bladder or rectum.

Two days afterwards when I saw him with Dr. Wilson he was fairly well in himself but the right foot showed signs of extensive burning. Both the upper and under surfaces of the big toe and of the two adjoining toes were blistered and vividly red round the edges. There was a superficial ulcer stretching for fully one inch across the sole of the foot just behind the toes, while towards the heel there was a blister three inches by two and a half, with red and swollen borders and extremely tender to the touch. A small burn with tender edges was also found on the back of the elbow, while over the upper part of the occipital bone there was a hard caked mass of blistered skin and incrusted exudation two inches in diameter and surrounded by a circle of superficial ulceration. The main features at this stage were the burnt appearance of the wounds—they looked angry and seemed as if they would slough (Fig. 1). It is interesting to

FIG. 1.



Burn on the heel and the under surface of the toes, the result of contact with "live rail." The appearances are those of a red[illegible] considerable reactive inflammati[illegible] The tissues look as if they wou[illegible]ken five days after the injury.

know in connexion with the extensive burns to the foot that the boot which the man was wearing at the time of the accident was not injured at all. I examined the boot carefully but it betrayed no sign whatever of having been the medium through which the electric current had passed [illegible] mark. The urine [illegible] 10th the wounds, instead of having made progress towards healing, looked worse. The ulcers were deeper and there was no healthy reaction on the part of the surrounding tissues. The under surface of the big toe looked as if it had been split open; the tissues were swollen and the exposed bone seemed as if it would necrose (Fig. 2). I was impressed by the great destruction of the tissues that had taken place and the absence of any attempt at healing nearly four weeks after the accident.

Electrical Currents and their Effects.

For the distribution of electricity into towns two kinds of currents are employed—the continuous and the alternating. The accidents produced by the two kinds of currents are not identical in all respects. The continuous current at high tension, coming into contact with the human body, causes burns and considerable disorganisation of the tissues. When the shock has been severe it nearly always causes death. With alternating currents burns also occur but they are usually less severe, while the destruction of the tissues is both less complete and not so widely diffused.

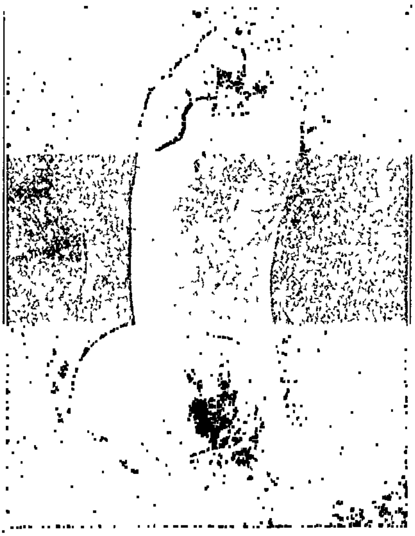
Experimental Evidence.

In 1885 Grange[1] reported two deaths from electric shock and made this circumstance the occasion for carrying out a series of experiments upon animals submitted to the influence of continuous currents. He attributed the death of animals thus dealt with to small hæmorrhages in the medulla oblongata, which he believed induced cessation of respiration and stoppage of the heart's action through excitation of the vagal centres. D'Arsonval, in a report presented to the Academy of Sciences in 1887, pointed out that electricity acted in two different ways—(1) by directly acting upon the tissues and destroying in an irremediable manner their physiological properties (*effets disruptifs*); and (2) by acting reflexly in an indirect manner and producing inhibition of the nerve centres which might or might not be of a fleeting character. In the latter case the main cause of death, he maintained, would be arrest of the breathing. At the Edison Laboratory, New York, experiments were carried out in 1889 by Brown, Kennelly, and Peterson[2] upon dogs, a horse, and two calves, the continuous and alternating currents being both employed. The alternating currents varied from 160 to 800 volts. These when applied for one second invariably caused death. The application of the continuous current, on the other hand, was not always lethal. Tatum,[3] in 1890, concluded from his experiments upon dogs that death was due to arrest of the heart's action. He demonstrated that neither the administration of atropine nor section of the pneumogastric nerves made the slightest difference, for when animals were exposed to a severe electric shock death still came through arrest of the heart's action. Tatum therefore attributed death in these circumstances to paralysis of the wall of the heart and not to any influence exercised by the current upon the nervous system.

In 1890 it was arranged by the legislature of the United States that criminals in that country were to be electrocuted by alternating currents of 1500 volts, from 15 to 30 cycles per second. In cases where the law was thus given effect to there was a general consensus of medical opinion that when the current was broken after a contact of several seconds the heart was found to be beating and that respiration re-established itself in such a manner as to oblige the executioner to make a fresh contact. In some of the criminals thus electrocuted Macdonald[4] found capillary hæmorrhages on the floor of the third and fourth ventricles of the brain but he admits that these lesions were not constant.

In 1896 Kratter[5] experimented upon a variety of animals with alternating currents and he came to the conclusion that death was due to paralysis of the respiratory centre and to asphyxia as a consequence. Kratter regarded as important elements the duration of the current and the kind of animal which he was employing. He found that guinea-pigs and rabbits resisted the shock better than dogs but on post-mortem examination no constant lesion was found. The blood was not altered nor did the nerve cells exhibit any appreciable change on microscopical examination.

FIG. 2.



Injury (burn) to foot, the result of contact with "live rail." The ulcers are deep and are surrounded by very unhealthy tissues. There is no sign of healing. Photographed on July 11th, 1904, 28 days after the injury.

In 1897 when serving on the Dangerous Trades Committee of the Home Office, one of the risky occupations referred to that committee was employment in electrical generating stations. To do justice to the inquiry I felt that it was desirable that fresh light if possible should be thrown upon the cause of death in electric shock. Accordingly, with the assistance of Dr. R. A. Bolam, my colleague in the physiological department of the College of Medicine, I carried out a series of experiments upon animals. The paper embodying the results of these experiments was published in 1898.[6] The animals employed were dogs and rabbits and the anæsthetic used was ether. Both the blood pressure and respiratory movements were recorded. An alternating current supply in the laboratory running at 100 volts and 100 cycles per second was transformed as required. Wet sponge electrodes efficiently insulated were applied to the fore and hind limbs of the animals on portions of skin previously shaved and thoroughly moistened. We found that when animals were exposed to electric currents of sufficiently high potential, death, practically speaking, was instantaneous. The animal was thrown into a state of opisthotonos during which breathing was suspended; the heart's beat was momentarily quickened and then arrested, while with currents of somewhat higher potential still it was immediately arrested without any preliminary quickening. In most of our experiments the organ first affected was the heart. Sometimes the breathing was observed to continue rhythmically after the heart had ceased beating. Only in the case of very high voltages with currents considerably above the potential usually required to kill an animal was there simultaneous stoppage of the heart and respiration. We never succeeded in causing primary arrest of the respiration followed by failure of the heart nor did we find that there was any absolute relation between the voltage employed and the death of the animal. A smaller animal, for example, was not killed by a lower voltage than an animal twice its size. Frequently it was the reverse of this. Circumstances suggested to us that the younger and the less highly organised the animal the higher often was the potential required to kill it when compared with that needed for an older animal.

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[1] Annales d'Hygiène et de Médecine Légale, 1885.

[2] New York Medical Journal, March, 1889.

[3] Ibid., 1890.

[4] Ibid., May, 1892.

[5] Der Tod durch Electricität, Leipsic.

[6] Brit. Med. Jour., Jan. 15th, 1898.

Prevost and Battelli[7] of Geneva found that alternating currents of feeble tension—e.g., 120 volts—caused fibrillary tremor of the heart and that it was this circumstance which dominated all the other phenomena. The action of the heart was arrested after contact of one second. Occasionally there was a generalised tetanus with opisthotonos followed by clonic convulsions. Prevost and Battelli divided electrical currents into high, medium, and low, rather an arbitrary division on the whole. In dogs receiving 240 volts for two seconds the heart presented fibrillary tremor and there was generalised tetanus followed by complete arrest of respiration; with 600 volts for two seconds there was fibrillary tremor of the heart with convulsions but no respiratory movement; while with currents ranging from 240 to 600 volts there was produced in dogs simultaneous arrest of heart and respiration. These observers found (1) that currents of low tension produced paralysis of the heart; (2) that mean tension currents produced simultaneously paralysis of the heart and respiration; and (3) that high-tension currents caused principally nervous symptoms. The particular part of the body at which the electric current enters is of importance. Arrest of breathing and the development of convulsions were induced by a smaller voltage when the electrodes were applied to the head. The mode of death from continuous currents they found to be in the main similar to that brought about by alternating currents; also that currents of 550 volts caused rapid fall of arterial pressure due to paralysis of the heart.

D'Arsonval held the view that the continuous current was only risky to life when the circuit was broken, but most observers while admitting that the shock is more dangerous when the circuit is broken, yet are of opinion that closure of the circuit is equally dangerous. Battelli found that there was no exact relationship between the electrical energy necessary to cause the death of an animal and its weight, yet maintained, contrary to most observers, that young animals are more sensitive to the effects of electricity than those of maturer age.

R. H. Cunningham[8] of New York from his experiments concluded that although during the passage of the electric current there is respiratory standstill, yet the respiratory centre in the medulla is neither paralysed nor instantly killed, otherwise no natural rhythmical respiratory movements could occur after the circuit is broken. He found that the currents affected principally the left wall of the heart. There was cessation of the heart's beat upon closure of the circuit. Currents of from 110 to 120 voltages readily killed dogs when passed for one minute 16 seconds from the head to the thorax. The currents were equally fatal when carried through the thorax by attaching the electrodes to the forearms, or one to the left forearm and the other over the heart. Cunningham found that young, well-nourished, and hardy dogs withstood a slightly greater strength of current through the chest for a longer time than ill-nourished or older dogs and that the minimum strength of current required to stop the heart of different dogs bore no definite ratio to their size and weight. "Besides the influence exerted by the quality, duration, strength, and density of the current there must be some other factor, apparently residing in the heart and probably physiological in nature, which exercises an influence in the readiness with which the cardiac effect is produced." An enfeebled state of health, for example, may increase the susceptibility of an animal to electrical shock. In cases where men have received severe but not lethal shocks there has usually been before consciousness is lost a moment or two during which strange sensations have been experienced, not necessarily of pain but as if the muscles were all drawn and a sensation of tremendous pressure felt across the chest. Owing to the severity of the muscular spasms a man falling upon the live rail might be thrown in one or other direction, thus breaking his connexion with the live contact.

Voltage Required to Kill.

Opinions are divided as to the voltage required to kill. The professor of electrical engineering at University College, London, Dr. J. Ambrose Fleming, tells us that at one time he thought it was only high voltages that killed. This opinion he no longer holds. The peculiar circumstances operating at the time must be taken into consideration. Men may not be killed on brief contact with 2000 volts while contact with 500 may prove fatal. Railways run at from 300 to 600 volts and this is allowed by the Board of Trade in the belief that it is not dangerous. Experience does not confirm this opinion, as contact with lower voltages has shown again and again. In a public bath in London a man recently lost his life by accidentally placing his hands upon the electric light wires in which the pressure was only 250 volts, the same as in private houses. In this case the danger was increased owing to the man's hands being wet. The risks to workmen on the railway are intensified during wet weather. To these men the danger lies in placing one foot on the live rail while the other is on earth. As Professor Fleming says, "You may stand on a live rail or even sit or lie on it. ...... There is no danger so long as you are entirely on the rail. If you could be absolutely insulated from the earth there is probably no pressure of current that would do you any harm. The danger comes when one part of you, especially a bare part such as the hand or face, touches the live rail and some other part is in contact with the earth. That is where the 'live' rail constitutes so grave a danger." With railway lines in the open country the danger is not alone that cattle or sheep may stray upon them, but that the animals may be electrocuted and their bodies falling upon the track may become the cause of an accident to the train that follows. If the lives of the travelling public are to be safeguarded there must be adequate covering of the elevated rail, not only at stations and level crossings, but along the whole length of the track. The manner in which this rail should be protected is a matter for electrical and railway engineers. Gloves made of indiarubber should be worn by men who are proceeding to rescue the victims of electrical shock on a railway, and on carefully removing these unfortunate persons from contact with the elevated rail artificial respiration should be at once resorted to in cases of suspended animation and maintained for a considerable length of time, for more than half an hour if necessary. Cunningham recommends transfusion of defibrinated blood as an accompaniment to artificial respiration. This method of treatment has been followed by good results in his hands but it is evidently more likely to be adopted and to prove more successful in the laboratory than on a railway line for example.

Newcastle-upon-Tyne.

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[7] Journal de Physiologie et de Pathologie Générale, Paris, 1899.

[8] Cause of Death from Industrial Electric Currents, New York Medical Journal, 1899.

ON THE ACTION OF VENOMS OF DIFFERENT SPECIES OF POISONOUS SNAKES ON THE NERVOUS SYSTEM.

By GEORGE LAMB, M.D. GLASG.,
CAPTAIN, I.M.S.; ASSISTANT DIRECTOR, PASTEUR INSTITUTE OF INDIA;

AND

WALTER K. HUNTER, M.D., D.SC., F.F.P.S. GLASG.,
ASSISTANT PHYSICIAN, GLASGOW ROYAL INFIRMARY; LECTURER IN PRACTICE OF MEDICINE, QUEEN MARGARET COLLEGE, UNIVERSITY OF GLASGOW.

II.—A FURTHER NOTE ON COBRA VENOM.

IN a former communication to THE LANCET[1] we described the histological appearances of the central nervous system in six monkeys and three rats paralysed with cobra venom. Since then we have examined in a similar manner the tissues of seven other monkeys and we wish to take this opportunity of putting our results on record. The first four monkeys may be considered as an addition to the series of six already published; but they were also examined with special reference to the action of cobra venom on nerve fibres, especially those in peripheral nerves. The three remaining monkeys were regeneration experiments—that is to say, they were first paralysed by subcutaneous injections of the venom but they subsequently recovered on the administration of an antivenom. The methods of fixing and staining in these seven cases were the same as noted in our former paper except with regard to the peripheral nerves, portions of which were fixed in Müller's fluid and other pieces in perchloride of mercury or formol. The nerves were stained by (1) theoin (for nuclei); (2) hæmatoxylin and benzo-purpurin (for axes cylinders and nuclei); (3) Congo red (for axes cylinders); and (4) Busch's method (for myelin). In the cases in which Busch's method of staining was employed the animals were kept on ice for 24 hours after death before the tissues were removed. The following are the details of the cases :—

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[1] THE LANCET, Jan. 2nd, 1904, p. 20.

—	Weight in grammes.	Dose per kilogramme.	Time before death.
		Milligrammes (subcutaneously).	
Monkey No. 7	2950	0 4	6 hours 30 minutes.
,, ,, 8	2560	0·4	5 ,, 40 ,,
,, ,, 9	9465	0 5	2 ,, 30 ,,
,, ,, 10	2710	0·5	1 ,, 30 ,,
,, ,, 11	3310	0·5	Paralysed in 2 hours 10 minutes; antivenom; recovery in 4½ hours; killed at once.
,, ,, 12	3930	0·5	Paralysed in 2 hours; antivenom; recovery in 6 hours; killed 20 hours later.
,, ,, 13	3210	0·45	Paralysed in 3 hours 40 minutes; antivenom; recovery in 3 hours; killed 44 hours later.

Monkey No. 7, weight 2950 grammes, died in six and a half hours after subcutaneous injection of 0·4 milligramme per kilogramme of cobra venom. Generally the degenerative changes in this case were even more marked than in Monkey No. 1 of our former series. In the cord there were, in the lateral groups of cells, some six to ten cells deeply stained, with chromatic granules still present and fairly consistent, though rather ill defined and lying in a somewhat diffusely stained plasma. The rest of the lateral cells and all the more central cells were devoid of granules and the majority were very pale, indeed typically "ghost" cells. Some few cells showed vacuolation. These degenerative changes seemed rather more marked in the lumbo-sacral than in the cervical region. In the cerebral cortex the appearances were similar to those in the cord, there being a proportion of the larger pyramidal cells deeply stained but with rather ill-defined granulation. The smaller ganglion cells were pale and quite devoid of granules. In the nuclei of the pons and medulla the proportion of almost normal cells was much more considerable. There seemed to be a slight increase of the connective-tissue (neuronophagen) cells throughout the grey matter of the cerebro-spinal system, especially round the smaller and paler ganglion cells. Sometimes these connective-tissue cells were found indenting the margin of the ganglion cell and sometimes even in its interior. With Busch's staining there was no appearance of degenerate fibres in cerebral or cerebellar cortices, or in the pons, medulla, or cord. The anterior and posterior nerve roots were likewise seen to be unaffected. The peripheral nerves examined were the median (near elbow), posterior tibial (portion between soleus and gastrocnemius muscles), and vagus (in cervical region). All of these seemed to show some slight increase of their internodal nuclei but this increase was by no means well marked. With Busch's staining there was no certain evidence of coagulation or breaking up of the myelin. There was some blackening of the fibres in places but this was probably an artefact due, at least in part, to the nerves lying rather long in formol. The axes cylinders were in places slightly swollen but not much more than was to be seen in the control sections; so that this appearance could not be regarded as pathological.

Monkey No. 8, weight 2560 grammes, died in five hours and 40 minutes after subcutaneous injection of 0·4 milligramme per kilogramme of cobra venom. The appearances in this case were much the same as in Monkey No. 7, though not quite so marked and not quite so uniform throughout the whole cerebro-spinal system. For instance, in the lumbo-sacral region of the cord the chromatolysis was just as extensive as Monkey No. 7, while in the cervical cord the number of the almost normal cells lying in the lateral groups was considerably greater. In the pons and medulla, too, excepting the cells of the third nucleus, which had their granules much fragmented, those in the optic nuclei, fifth, seventh, and twelfth were practically normal. With Busch's staining there was no reaction for degenerate fibres in any part of the cortex, pons, medulla, or cord. The appearances in the peripheral nerves were much the same as in Monkey No. 7—namely, slight increase of internodal nuclei with no certain evidence of change in the myelin or axes cylinders.

Monkey No. 9, weight 9485 grammes, received 0·35 milligramme per kilogramme of cobra venom. The day following the animal looked dull but there were no signs of paralysis. Three days later it was apparently quite well and was therefore again given 0·35 milligramme per kilogramme of the venom. It was again dull on the day following but with no [illegible] quite well [illegible] then give[illegible]ours. The microscopic appearances in this monkey were much the same as in Monkey No. 3 of our former series, also dead in two and a half hours after injection of the poison. At some levels of the cord the ganglion cells looked almost normal, while at others there seemed undoubted evidence of an early degenerative change. Taken as a whole, we may say that a definite proportion of the ganglion cells of the lateral groups were too diffusely stained and had their granules somewhat fragmented. Some cells, too, were rather deficient in granules, especially those cells in the more central groups. The ganglion cells in the nuclei of the pons and medulla seemed practically normal. In the cerebral cortex the ganglion cells were again rather diffusely stained with their Nissl bodies slightly broken up. There seemed in this case also some slight increase in the connective-tissue cells, though in the cord, at least, they did not seem so definitely collected round the ganglion cells, and they were not found indenting their edges nor yet in their interiors. With Busch's staining there was no reaction for degenerate fibres in the cortex, pons, medulla, or cord. The nerves showed very slight, if any, increase of nuclei; there was no definite evidence of their axes cylinders or [illegible]

[illegible] 2710 grammes, received subcu[illegible] per kilogramme of cobra venom. At the end of one and a quarter hours paralysis appeared, and a quarter of an hour later was nearly complete. The animal was then killed by being bled to death, having lived one and a half hours after receiving the poison. The appearances throughout the nervous system in this case were practically normal. In the cord the vast majority of the ganglion cells had their Nissl granules quite consistent and well formed, though in some of the cells they were not so regularly arranged in the cell plasma as in the typically healthy cell. Occasionally, too, one found a section in which these granules seem to be rather deficient in number and not too well defined, as if a solvent had been acting on them. The staining also was more intense than is found in the normal (control) specimens. The same applies to the cells of the cerebral cortex—that was, they were almost normal, though a proportion of them had their Nissl granules deficient and not quite well defined. There was no definite increase of the connective-tissue cells in the grey matter of the cerebro-spinal system. The peripheral nerves might be taken as normal, there being no unequivocal increase of their internodal nuclei.

Monkey No. 11, weight 3310 grammes, received subcutaneously 0·5 milligramme per kilogramme of cobra venom. In two hours and ten minutes there were signs of paralysis in the limbs and the breathing was laboured. Antivenomous serum (ten cubic centimetres) was given intravenously. 50 minutes later paralysis was still present—that was, the animal could move about but with its legs dragging along the ground. Antivenomous serum (15 cubic centimetres) was now given subcutaneously. One and a half hours later all signs of paralysis had gone and the animal was then killed by bleeding from the femoral artery. The appearances of the ganglion cells in this case were of some interest, for when compared with the sections from the two following cases (Nos. 12 and 13) there seemed little doubt that there had been some change in the cells from which they had not yet recovered. In the cord quite 50 per cent. of the cells showed some deficiency of Nissl granules and many of them had these granules fragmented, giving a much finer granulation to the plasma than was normal. In some cells the granulation was quite dust-like, but all gradations were found between these and the cells with Nissl bodies of normal size. The proportion of cells affected in this way varied somewhat at different levels but in lower voltage than an animal twice its size. Frequently it was the reverse of this. Circumstances suggested to us that the younger and the less highly organised the animal the higher often was the potential required to kill it when compared with that needed for an older animal.

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R. H. Cunningham[8] of New York from his experiments concluded that although during the passage of the electric current there is respiratory standstill, yet the respiratory centre in the medulla is neither paralysed nor instantly killed, otherwise no natural rhythmical respiratory movements could occur after the circuit is broken. He found that the currents affected principally the left wall of the heart. There was cessation of the heart's beat upon closure of the circuit. Currents of from 110 to 120 voltages readily killed dogs when passed for one minute 16 seconds from the head to the thorax. The currents were equally fatal when carried through the thorax by attaching the electrodes to the forearms, or one to the left forearm and the other over the heart. Cunningham found that young, well-nourished, and hardy dogs withstood a slightly greater strength of current through the chest for a longer time than ill-nourished or older dogs and that the minimum strength of current required to stop the heart of different dogs bore no definite ratio to their size and weight. "Besides the influence exerted by the quality, duration, strength, and density of the current there must be some other factor, apparently residing in the heart and probably physiological in nature, which exercises an influence in the readiness with which the cardiac effect is produced." An enfeebled state of health, for example, may increase the susceptibility of an animal to electrical shock. In cases where men have received severe but not lethal shocks there has usually been before consciousness is lost a moment or two during which strange sensations have been experienced, not necessarily of pain but as if the muscles were all drawn and a sensation of tremendous pressure felt across the chest. Owing to the severity of the muscular spasms a man falling upon the live rail might be thrown in one or other direction, thus breaking his connexion with the live contact.

Voltage Required to Kill.

Opinions are divided as to the voltage required to kill. The professor of electrical engineering at University College, London, Dr. J. Ambrose Fleming, tells us that at one time he thought it was only high voltages that killed. This opinion he no longer holds. The peculiar circumstances operating at the time must be taken into consideration. Men may not be killed on brief contact with 2000 volts while contact with 500 may prove fatal. Railways run at from 300 to 600 volts and this is allowed by the Board of Trade in the belief that it is not dangerous. Experience does not confirm this opinion, as contact with lower voltages has shown again and again. In a public bath in London a man recently lost his life by accidentally placing his hands upon the electric light wires in which the pressure was only 250 volts, the same as in private houses. In this case the danger was increased owing to the man's hands being wet. The risks to workmen on the railway are intensified during wet weather. To these men the danger lies in placing one foot on the live rail while the other is on earth. As Professor Fleming says, "You may stand on a live rail or even sit or lie on it. ...... There is no danger so long as you are entirely on the rail. If you could be absolutely insulated from the earth there is probably no pressure of current that would do you any harm. The danger comes when one part of you, especially a bare part such as the hand or face, touches the live rail and some other part is in contact with the earth. That is where the 'live' rail constitutes so grave a danger." With railway lines in the open country the danger is not alone that cattle or sheep may stray upon them, but that the animals may be electrocuted and their bodies falling upon the track may become the cause of an accident to the train that follows. If the lives of the travelling public are to be safeguarded there must be adequate covering of the elevated rail, not only at stations and level crossings, but along the whole length of the track. The manner in which this rail should be protected is a matter for electrical and railway engineers. Gloves made of indiarubber should be worn by men who are proceeding to rescue the victims of electrical shock on a railway, and on carefully removing these unfortunate persons from contact with the elevated rail artificial respiration should be at once resorted to in cases of suspended animation and maintained for a considerable length of time, for more than half an hour if necessary. Cunningham recommends transfusion of defibrinated blood as an accompaniment to artificial respiration. This method of treatment has been followed by good results in his hands but it is evidently more likely to be adopted and to prove more successful in the laboratory than on a railway line for example.

Newcastle-upon-Tyne.

ON THE ACTION OF VENOMS OF DIFFERENT SPECIES OF POISONOUS SNAKES ON THE NERVOUS SYSTEM.

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AND
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II.—A FURTHER NOTE ON COBRA VENOM.

IN a former communication to THE LANCET[1] we described the histological appearances of the central nervous system in six monkeys and three rats paralysed with cobra venom. Since then we have examined in a similar manner the tissues of seven other monkeys and we wish to take this opportunity of putting our results on record. The first four monkeys may be considered as an addition to the series of six already published; but they were also examined with special reference to the action of cobra venom on nerve fibres, especially those in peripheral nerves. The three remaining monkeys were regeneration experiments—that is to say, they were first paralysed by subcutaneous injections of the venom but they subsequently recovered on the administration of an antivenom. The methods of fixing and staining in these seven cases were the same as noted in our former paper except with regard to the peripheral nerves,

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[7] Journal de Physiologie et de Pathologie Générale, Paris, 1899.

[8] Cause of Death from Industrial Electric Currents, New York Medical Journal, 1899.

[1] THE LANCET, Jan. 2nd, 1904, p. 20.

20 hours after recovery from paralysis, so that it would seem that regeneration of the ganglion cells takes place sometimes within 20 hours after disappearance of the symptoms of paralysis But we hope at some future time to study more carefully the process of regeneration in the ganglion cells either with cobra venom or with one of the other snake poisons

In concluding, we wish to express our indebtedness to Dr J Lindsay Steven for the use of his laboratory and apparatus in carrying out a part of this investigation One of us (W K H) has also to acknowledge aid from the Carnegie Trust in the form of a grant towards the expenses incurred in this investigation

THE

RESPIRATORY AND CARDIAC REFLEX INDUCED BY PERIPHERAL IMPRESSIONS ON THE PUDIC NERVE DURING ANÆSTHESIA

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IN his "Address in Surgery' to the British Medical Association Sir William Macewen refers to the familiar spasm of the glottis produced during anæsthesia by forcible dilatation of the sphincter ani or irritation of the parts supplied by the pudic nerve In these circumstances this spasm is part, often the only surviving part, of an expulsive effort and has, I think, been recognised as such for some time The causes which give rise to it are of a kind which in normal circumstances tend to initiate expulsive efforts Chief of these are any sudden increase in the intra abdominal pressure—e g , distension of the bladder or rectum, the reduction of large herniæ of old standing, the introduction of the hand or large sponges into the abdominal cavity, dilatation of the sphincter ani and occasionally of the os uteri, &c It may also be produced by any peripheral irritation especially in young subjects Its occurrence in the course of surgical interference comes about in the following manner

Expulsive efforts are performed through the agency of the respiratory and other nerve centres in response to stimuli reaching them from certain organs and conveyed by various nerves, chief of which are the branches of the pudic nerve Irritation of one of these nerves produces an impression on the centre more or less equivalent to its normal stimulus and evokes a reflex response, just as irritation of the optic nerve
gives the sensatio
normal stimuli con
bladder or rectum
tion of the sphinc
result in an expuls
depends upon the degree of narcosis, that is, upon the number of unparalysed nerve centres that are left to carry out the act This becomes evident when the constitution of the nervous system and its mode of reaction towards anæsthetics are considered

The nervous system as a whole is composed of numerous nerve centres or nerve mechanisms which appear and reach their maturity at different periods in the evolution of the race and growth of the individual The highest and most complex of these functions are latest developed and least able to resist disease or depressing conditions This also holds good as regards their response to the action of chloroform and other anæsthetics The continued inhalation of chloroform induces a progressive paralysis of the various nerve centres beginning with the highest most complex and latest acquired functions, and ending with paralysis of the fundamental functions of respiration and circulation What is true of the nervous system as a whole is equally true of its more complicated reflex mechanisms which react to anæsthetics in a similar manner Each reflex mechanism consists of a fundamental and accessory elements, which latter by their cooperation assist in the performance of the reflex without being absolutely essential to it Thus in every such reflex there are associated several nerve centres the coordinate action of which is necessary for the complete development of the reflex Under the influence of deepening anæsthesia these associated accessory centres are the first to be paralysed but the essential factor in the reflex resists longest and is the last to disappear

An expulsive effort is a mixed reflex intimately associated with respiration but requiring for its most effectual performance the assistance of various nerve centres Intrinsically it is an expiration, more or less forcible, necessarily associated *with closure of the glottis This sudden closure* or spasm of the glottis is an essential or fundamental portion of the reflex and constitutes the feature which differentiates it from an ordinary expiration This being so, the act of closing the glottis as a fundamental factor in the reflex, should longest resist the anæsthetic, and this proves to be the case Under the influence of the anæsthetic the associated nerve centres gradually become paralysed, the response to stimuli becoming less and less complete as fewer nerve centres participate in the action Ultimately when the *narcosis has become profound the essential fundamental* portion of the reflex the closure of the glottis alone survives Finally this too may be abolished and then the only response to stimulation is evidenced by an alteration in the respirations through the effect of the stimulus on the unparalysed respiratory centre Under varying degrees of narcosis every variety of expulsive effort may be seen from a complete effort accompanied with closure of the lips alteration of the facial expression, and ' bearing down in slight anæsthesia, to the faintest *laryngeal stertor or mere catch in the breath in deep narcosis* The spasm cannot be safely abolished because it arises from the respiratory centre which strongly resists the action of anæsthetics

When spasm of the glottis arises as the consequence of peripheral irritation its mechanism would appear to be as follows Sudden acute pain in the conscious subject is met by an involuntary deep inspiration, followed by closure of the glottis and fixation of the chest preparatory to an exclamation or other effort What occurs in the conscious subject tends equally to occur in the unconscious or semi conscious individual but a number of centres being paralysed the action is not complete or properly coordinated, hence the stertor As regards the alteration in the pulse there are two factors The procedures inducing the above abortive expulsive efforts are all painful and as such cause a certain amount of shock and so may influence the circulation Further, the circulation is intimately associated with, and in a measure dependent upon the respiratory movements Any modification of these especially such as increase the intrathoracic pressure as do expulsive efforts of necessity alter the pulse and will account for the majority of the cases

It is interesting to note that forcible dilatation of the sphincter ani has been suggested as a remedy in chloroform accidents, the object being to stimulate respiration Of course in the conscious subject an expulsive effort is preceded by a deep inspiration but in a state of narcosis sufficiently profound to induce respiratory paralysis this would not take place It is questionable if at any stage of narcosis other than a very slight one this almost involuntary preliminary inspiration could be elicited by dilatation of the sphincter ani

Manchester

A CASE OF LATENT PORTAL CIRRHOSIS WITH SUDDEN ONSET OF HÆMATEMESIS AND RAPIDLY FATAL TOXÆMIA

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The following case is of interest from the great rarity of the concurrence of these conditions the suddenness and rapidity of the symptoms without any prodromal signs in a case of cirrhosis which had been latent for many years, and the post mortem examination revealing a healthy condition of the abdominal viscera.

On April 26th, 1904, I was called to see the patient a stout, healthy man, aged 56 years He had been perfectly well up to the previous day, but now complained of malaise and drowsiness with a feeling of "fulness in the stomach." Examination proved negative; no pain or abdominal tenderness could be made out. The temperature was normal and the pulse was 76 and soft. Simple gastric sedatives were prescribed. On the next morning at 3 A.M. I was called to see him. When I arrived I found that he had vomited about a quart of blood consisting of small recent clots. He was now in a semi-comatose condition and very irritable and resisted any attempts at physical examination. Later in the day a large motion consisting of altered blood was passed and with considerable difficulty the following points were revealed by examination. In the epigastrium a hard tumour was felt of about the size of the closed fist; it was semi-resonant and apparently the surface was smooth, but owing partly to the patient's mental condition and partly to the fatness of the abdominal walls its relation to the liver could not be definitely made out. The edge of the liver was felt in the right flank about two fingers' breadth below the costal margin. There were no prominence of the superficial abdominal veins, no evidence of ascites, and no œdema of the extremities. The patient was not jaundiced, the tongue was clean, and the breath had no characteristic odour. The temperature was 99° F. and the pulse was 84, soft and regular. The arteries were normal. Examination of the thorax was negative. Later he became delirious and finally comatose but recovered consciousness after an intravenous transfusion of a quart of normal saline solution. Urine was freely passed during this period of consciousness. There were no trace of albumin and no reaction with ferric chloride. The specific gravity was 1030. Unfortunately the improvement of his mental condition was only temporary. In about eight hours his pulse rose suddenly to 132 and suspecting the possibility of another hæmorrhage one and a half drachms of adrenalin chloride were administered by the mouth. Within half an hour the pulse had fallen to 96 with decided improvement in his condition. On the next day the patient rapidly lost consciousness again, the pulse remaining at 96. The weakness gradually increased. Six hours before death the temperature rose to 102·6°, four hours later it was 104·2°, and it was maintained at that point when death occurred.

Post-mortem examination.—Rigor mortis was present. There was about an inch of fat on the abdominal walls. There were no enlarged veins and no signs of jaundice. The abdominal cavity was free of fluid. The tumour felt in the epigastrium was found to be the left lobe of the liver which was moderately enlarged. The liver was "hobnailed." The right lobe was of about the normal size and shape. It cut with increased resistance: on section it showed signs of coarse cirrhosis of a multilobular type. The fibrous tissue was in narrow strands and evenly distributed throughout the organ. The gall-bladder was distended with normal bile, but no calculi were present. The spleen was much softer than usual and about double the normal size. There was no evidence of gastritis in the stomach beyond a small amount of mucus on the walls and it was not dilated; petechiæ were found at the cardiac end on the lesser curvature, over an area about two inches by one inch, together with two or three small erosions at the same spot, but no evidence of eroded vessels was found. Only one inch of the œsophagus *was examined; the veins were very prominent.* The kidneys were healthy. It is to be regretted that only a partial post-mortem examination could be made.

The patient, a hypochondriac whose previous medical history was uneventful, had, so far as it could be ascertained, always enjoyed good health and not suffered from any illness. After his death I was able to obtain a history of free indulgence in alcohol for a year or two which, however, was said to have ceased some seven years or more ago. Since then he had been a moderate liver, though there is reason to believe that for about a fortnight before this illness he had drunk to excess and had suffered great mental distress. Three months previously I had examined him thoroughly but could not find any sign of local or general disease. There had at no time been any epistaxis, nausea, or dyspepsia, beyond occasional attacks of flatulence; neither had vomiting occurred and the bowels were always very regular—in fact, up to the onset of his illness there had been no reason to regard him otherwise than as a healthy man with a tendency to corpulence.

The chief interest of this case lies (1) in the conjunction of hæmatemesis and toxæmia, the latter being possibly exaggerated by the hæmatemesis; (2) the latent hepatic condition; and (3) the fulminating quality of the symptoms when they arose, all of which rendered diagnosis extremely difficult. That toxæmia from some cause or other was present appeared probable from the absence of any definite evidence of an organic cerebral lesion, but with the exception of hæmatemesis and what subsequently proved to be enlargement of the liver the signs upon which to base a diagnosis were purely negative. The urine was free from sugar and albumin. The heart and the radial vessels were healthy and there were no signs of renal disease. Probably in this case an acute process had been set up in the liver by the last bout of drinking, and this, together with the decrease in the coagulability of the blood produced by the alcohol, would account for the rapidity and the combination of the symptoms.

As has been pointed out already, the peculiar feature of interest in this case of latent cirrhosis is the sudden and simultaneous appearance of hæmatemesis, which is usually an early symptom, and of toxæmic coma, usually a terminal event in portal cirrhosis. The most satisfactory explanation would appear to be that sudden and complete insufficiency of the liver supervened, probably as the result of recent excessive alcoholism. Gilbert and Carnot,[1] who speak of this condition as "anhépatie," mention among its manifestations "multiple hæmorrhages, delirium, and coma." It is possible that the small erosions in the stomach were due to the toxic action of the alcohol and their existence might account for the occurrence of the extensive local hæmorrhage instead of multiple extravasations. Latent cirrhosis was thought of and that diagnosis was held tentatively. Less difficulty might have been experienced had an alcoholic history been forthcoming earlier, but its absence at that time, together with the rare combination of hæmatemesis and toxæmia, militated against the theory of hepatic cirrhosis and it is owing to this unusual combination that I venture to place this case on record.

I am indebted to Dr. H. D. Rolleston for his kind suggestions.

Cadogan-gardens, S.W.

THE
MEDICAL TREATMENT OF DEEP-SEATED HÆMORRHAGE.

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IT is generally admitted that most therapeutic advances have originated more or less accidentally in observation—that is, inductively, not deductively. The therapeutic procedure advocated in this paper, should it be accepted as an advance, is one of the exceptions to the above general rule. It was suggested by physiological considerations and only thereafter put to the clinical test.

It may be stated as not open to question that hæmorrhage, whether arterial or capillary, depends essentially upon the *existence of a certain blood pressure* in the bleeding area and that the indication for medical treatment consists in reducing this localised blood pressure. Such we might hope to achieve: (1) by promoting vaso-constriction of the arterioles supplying the bleeding area; or (2) by promoting fall of blood pressure through widespread vaso-dilation in other areas. It is to the first of these methods that attention is commonly directed. In cases where the bleeding area is accessible to local treatment—for example, in certain cases of hæmatemesis—the promotion of localised vaso-constriction, as by ice pills, adrenalin, &c., may be very successful. But frequently the bleeding area is inaccessible to direct local treatment. Then in order to promote localised vaso-constriction we are forced to fall back upon remedies which promote vaso-constriction generally. Until lately ergot was the remedy usually used for this purpose, but now that far more powerful vaso-constrictor adrenalin is coming into general use. As regards ergot, though I have used it conscientiously for many years in cases of inoperable deep-seated hæmorrhage yet I could never assure myself that it was of real advantage except, of course, in uterine hæmorrhage. But the general, as well as the local, action of adrenalin is undoubtedly capable of checking hæmorrhage in some cases: There are, however, at least two serious objections to all remedies which promote general vaso-constriction effectively. On the one hand, unless the general vaso-constriction is adequately compensated by cardiac inhibition the general blood pressure, including the blood pressure of the bleeding area, will rise rapidly; thus the bleeding might continue or even increase. On the other hand, if the general vaso-constriction is adequately compensated by cardiac inhibition serious symptoms depending on brain anæmia are liable to arise; these might conceivably amount to general convulsions. This danger is not, I think, fully appreciated although it is known that in epilepsy the administration of suprarenal extract increases the number of attacks (Pugh[1]).

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[1] *Les Fonctions Hépatiques*, p. 273.

These considerations led to the determination to try the second method of reducing blood pressure in the bleeding area, namely, by promoting the fall of the general blood pressure through widespread vaso-dilation, and the administration of amyl nitrite by inhalation was the obvious means of fulfilling this indication. This method, it was argued, would be applicable not alone to cases of hæmorrhage from some part of the systemic circulation but to pulmonary hæmorrhage. For, as Schäfer[2] points out, the blood pressure in the pulmonary circulation may be reduced passively "by a fall of pressure in the left auricle due to diminished resistance in the aortic outflow"; and there could be no question that amyl nitrite would diminish resistance in the aortic outflow. The following is a brief account of the first four cases of hæmoptyis treated by inhalation of amyl nitrite.

CASE 1.—The patient, a man, aged 36 years, who suffers from mitral insufficiency, is often attacked on becoming chilled by hæmoptysis: this probably is a response to cutaneous vaso-constriction. The bleeding had never ceased under two days and usually it had persisted for from two to four days. On the last occasion hæmoptysis began at midnight. There was at the time marked coldness of the hands and feet which was not due to anxiety. The inhalation of one capsule of amyl nitrite instantly relieved the vascular spasm of the extremities, and although the expectoration continued to contain traces of blood until the following day it was quite clear that the bleeding into the lung had been instantaneously checked. (Communicated by Mr. O. S. Hawkes.)

CASE 2.—A man, aged 31 years, a phthisical patient in the Diamantina Hospital, with consolidation and softening at the left apex, had hæmoptysis at 4.30 P.M. One capsule of amyl nitrite was immediately given by inhalation, whereupon the bleeding ceased instantaneously. At 6 50 P.M. there was a slight recurrence and $\frac{1}{100}$th of a minim of nitroglycerine was ordered every two hours. Rather profuse hæmoptysis recurred at 12.40 on the following morning but was again stopped instantaneously by amyl nitrite inhalation. Thereafter there was no further recurrence. In this case there can be no doubt that the bleeding ceased *propter*, and not merely *post, hoc*. On both of the occasions on which the inhalation was given the patient was bringing up mouthfuls of blood at regular intervals of about two minutes and on both occasions the mouthful preceding the inhalation was the last of the series.

CASE 3.—A man, aged 34 years, a phthisical patient in the Diamantina Hospital, with excavation of the upper part of both lungs, had had twelve attacks of hæmoptysis in nine years. Each attack had begun insidiously and steadily increased in severity. On no occasion had he ever had a slight attack of hæmoptysis which had passed off or been overcome without laying him up for ten days or a fortnight, and most of his attacks had constituted serious intercurrent illnesses which had left him conspicuously worse than at their onset and from which he did not recover for some weeks. On Jan. 16th, 1904, he began to cough up a little blood unmixed with his ordinary sputa. He was ordered to bed; all food was stopped, and a five-minim capsule of amyl nitrite was administered. The hæmoptysis stopped instantaneously, although streaks of blood permeated his sputa for a few days. During these days a capsule remained on his locker in readiness and he was instructed to use it immediately should the bleeding recur; it was not required, however.

CASE 4.—A phthisical patient in the Jubilee Sanatorium, Dalby, Queensland, had a cavity in the right apex. On Dec. 6th, 1903, hæmoptysis commenced. Over five ounces of blood had been lost when one capsule of amyl nitrite was administered by inhalation. The hæmorrhage ceased instantaneously and completely. On Jan. 30th, 1904, there had been no recurrence. Dr. Andrew Stewart, the visiting physician of the sanatorium, who reports this case, points out that there was no subsequent local congestion or rise of temperature such as usually occurs after hæmoptysis as severe as in this instance.

In the first of the above cases the proximate factor of the hæmoptysis was in all probability a sudden rise of blood pressure in the pulmonary circulation secondary to increased resistance in the aortic outflow dependent on widespread vaso-constriction of the skin from chill; in the remaining three the proximate factor was probably some extension of the tuberculous or septic ulceration, but in all the rationale of the result was identical—namely, the rapid, though indirect, reduction of blood pressure at the bleeding area.

To sum up, five consecutive attacks of hæmoptysis occurring in four patients were all stopped instantaneously by amyl nitrite inhalation. There has not been hitherto an instance of even comparative failure.

Manifestly in hæmoptysis there is in operation one of the most highly vicious circles in pathology—a circle which is largely responsible for the profuseness and continuance of the hæmorrhage. The intra-pulmonary irritation of the effused blood causes cough; each act of coughing, like any other form of sudden exertion, raises the blood pressure; each rise of blood pressure is apt to induce fresh hæmorrhage; and so on, the circle continuing to revolve in many cases until the loss of blood has been sufficient to reduce the blood pressure materially and thus terminate the hæmorrhage. This natural cure of hæmoptysis was at one period in the history of medicine imitated by physicians who resorted to venesection in this emergency—a somewhat expensive, but by no means irrational, imitation. The treatment by amyl nitrite is another imitation, less complete than venesection, but much more economical. The vicious circle is broken through at the same point and by similar means—namely, reduction of the general blood pressure, but the blood is saved instead of being lost. Consequently the procedure may be repeated as often as is necessary.

The point at which the vicious circle is broken through is of the greatest importance. Too often, I feel sure, I have been tempted to operate upon the cough by opiates such as morphine hypodermically. The resulting cessation of cough tends undoubtedly to the cessation of hæmorrhage, but the blood already effused is retained, decomposes inevitably, and not rarely induces septic pneumonia, high temperature, sweating, and prolonged exhausting illness not infrequently ending in death. This is the history of so many cases which seemed under open-air treatment on the road to rapid recovery that I had come to regard hæmoptysis as a grave misfortune. But if amyl nitrite proves efficient as a hæmostatic the hæmoptysis of phthisis will be largely freed from its subsequent as well as its immediate dangers. For the action of the drug is a safeguard against retention: it is the influx of blood to the ulcerated lung tissue, not the efflux from the air passages, which is checked; and the uninterrupted continuance of cough assures the rapid evacuation of blood already effused. In none of the cases detailed above was there, in so far as could be ascertained, any retention of blood; in none of them certainly was there the least subsequent additional rise of temperature or other complication.

Clinically phthisical hæmoptysis is the most important, because the most frequent, of all the medical or inoperable hæmorrhages. But the treatment by amyl nitrite would be even more directly applicable to cases in which the bleeding is from the systemic circulation. In a series of papers entitled "The Mechanism of the Paroxysmal Neuroses," which appeared in the *Australasian Medical Gazette* for July, August, September, and October, 1903, I argued that the most prominent clinical phenomena of migraine, gastralgia, asthma, and allied affections—namely, pain in the first two and dyspnœa in the last named—depend upon vascular distension due to vaso-dilation correlative of widespread vaso-constriction in other areas. (The evidence in support of this thesis is mainly clinical and circumstantial and cannot be even referred to here through lack of space.) Such vascular distension has terminated not very rarely in hæmorrhage. Thus in migraine there have resulted ecchymoses, sometimes extensive, of the face, scalp, conjunctivæ and choroid (Gowers, Tissot, Labarraque), profuse epistaxis (Liveing), and fatal apoplexy (Hilton Fagge); in asthma there has occurred hæmoptysis proportionate to the severity of the dyspnœa (Hyde Salter); and in gastralgia violent hæmatemesis has taken place.[3] Now, in none of these cases is it possible to be sure that the internal vaso-dilation, proximately responsible for the vascular distension and hæmorrhage, is always secondary to, and compensatory of, the widespread vaso-constriction, especially conspicuous in the cutaneous area; it may be that of some cases the converse holds—that the vaso-dilation is primary, the vaso-constriction being secondary and compensatory. But in either case it is certain that the vaso-constriction greatly intensifies the vascular distension in the bleeding area and consequently that a primary indication for treatment consists in the relaxation of the vaso-constriction. Amyl nitrite will undoubtedly effect this relaxation and thus will relieve the vascular distension; that is, the local blood pressure in the bleeding area. The treatment, however, so far as I know, has yet to be tried in these cases, but I can have little doubt of its success, at any rate its partial success.

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[1] Brain, 1902, p. 501.

[2] Text-book of Physiology, 1900, vol. ii., p. 150.

In the series of papers already referred to it was also argued that the mechanism of the physiological process of menstruation is identical with that of the pathological processes exemplified in migraine, gastralgia, asthma, &c. It was argued that just antecedent to and during menstruation there is an exaggeration of the normal physiological vascular tone or vaso-constriction in wide areas, conspicuously in the cutaneous area, and that such is compensated to some extent, though not fully, by vaso-dilation in the pelvic, more especially the uterine, area. This vascular modification accounts for the physiological increase of blood presssure antecedent to and during menstruation and for the premenstrual and menstrual incidence of the paroxysmal neuroses; it accounts also for the vascular distension of the uterine mucosa and for the eventuating hæmorrhage or menstrual flow. If this view of the mechanism of menstruation is correct, then anything—amyl nitrite inhalation, for example—which tends to cause widespread vaso-dilation, especially vaso-dilation of the surface, would tend to reverse the whole machinery of the menstrual process and would inevitably diminish, if it did not succeed in terminating, the uterine vascular distension and the menstrual flow dependent thereon. Now it is open for any physician to assure himself that amyl nitrite has this power. But I would not suggest that the experiment be made except, perhaps, in very special circumstances; for I have reason to believe that the sudden cessation of the menstrual flow which is liable to result may be fraught with exceedingly distressing, if not dangerous, sequelæ.

While I was deliberating as to the justifiability of testing the influence of amyl nitrite upon the menstrual flow I unwittingly performed the experiment, thus setting at rest any question as to the capacity of the drug to act in some cases in the manner anticipated. I was called in to see a woman, aged 25 years, who was suffering from vaso-motor angina pectoris. Almost immediately after my arrival a paroxysm occurred. I administered a capsule of the nitrite. The result was the instantaneous cessation of the pain, but the attacks continued to recur during the succeeding three or four days. A week later I learned that the patient had been menstruating when I administered the nitrite and that the period had terminated instantaneously. I then obtained the following history. She had suffered from angina on and off for several years. The attacks were especially prone to occur and to be especially severe on the day preceding and on the first day of menstruation. Several physicians had administered amyl nitrite and this invariably gave instant relief. But whenever she had inhaled the drug during menstruation—and she had done so frequently—the invariable result had been the immediate cessation of the flow and the termination of the period. She had made the further important observation that whenever a menstrual anginal seizure was dispersed by the nitrite with concurrent checking of the flow the attacks continued to recur for several days, but whenever the drug was omitted during menstruation the anginal seizures were limited to the day preceding and the first day of menstruation. Menstruation in her case was exceedingly irregular as regards time of onset and she was of opinion that menstrual periods had often been altogether missed through inhalation of amyl nitrite. Considering the frequency of premenstrual attacks in her case this seems not unlikely.

South Brisbane, Queensland.

THE

RIDEAL-WALKER METHOD OF TESTING DISINFECTANTS, WITH SPECIAL REFERENCE TO THE ACTION OF FORMALIN AND CYLLIN ON THE PLAGUE BACILLUS.

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AND
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LAST year Mr. Rideal and Mr. Walker[1] described a simple and ingenious method for testing the germicidal action of disinfectants. The method was so devised that a number of tests with different strengths of the substance at stated intervals could be carried out with a minimum of labour and with the least expenditure of time. The method was also especially devised to compare the disinfecting action of different substances, and as a comparison these authors adopted carbolic acid as a standard. They were thus able to obtain a figure which they term "the carbolic acid coefficient," and which is of especial value for comparative purposes. This figure is obtained thus: the particular strength of the disinfectant which will kill in a given time is divided by the strength of carbolic acid which under the same conditions will kill the same microbe in the same time. Thus if a 1 in 80 solution of disinfectant X will destroy the typhoid bacillus in five minutes and the strength of carbolic acid which will act similarly is 1 in 100, the carbolic acid coefficient of X is $\frac{80}{100} = 0{\cdot}8$; if a solution of disinfectant Y of strength 1 in 150 is similarly equal to carbolic acid 1 in 100, the carbolic acid coefficient would be $\frac{150}{100} = 1{\cdot}5$. The cost of disinfecting can thus also be estimated. If disinfectant X costs the same as carbolic acid, the cost of disinfecting with X would be two-tenths more than with carbolic acid; with Y in the same circumstances carbolic acid disinfection would cost half as much again. Briefly, the details of carrying out the method are as follows. A special test-tube rack is made use of. It consists of a lower tier with five holes for five test-tubes and an upper tier with two rows (one behind the other) of 15 holes each and divided by spacing into three groups of five (or tens reckoning both rows). Into the bottom row test-tubes containing five cubic centimetres each of various strengths of the disinfectant and of carbolic acid for comparison are placed and into each are dropped at intervals of half a minute five drops of a broth culture of the organism chosen —e.g., the typhoid bacillus, bacillus coli, or micrococcus pyogenes aureus, &c. Having finished the addition of the culture to the tubes subcultures are made in nutrient broth, the broth tubes having previously been placed in the rack in the upper tier of holes, a loopful being taken from each tube containing the disinfectant and sown into a broth tube at intervals of half a minute. In this way a subculture is made from each tube after intervals of two and a half, five, seven and a half, ten, 12½, and 15 minutes. The inoculated tubes are then incubated; if growth occurs it is assumed that the organism has not been killed, if no growth occurs it is assumed that it has been killed, and the results may be charted on appropriate forms as shown below. Sterile test-tubes are employed for the disinfecting solutions, the dilutions of the disinfectant are made with sterile tap water with sterilised pipettes, and in this way contamination with extraneous microbes is practically excluded.

Smith and Sommerville[2] have tested the method and have found it work well Sommerville[3] also gives the results of further experiments carried out by the method demonstrating its accuracy The bacillus typhosus, together with the bacillus coli communis, form diffuse abundant growths with more or less isolated microbes in broth cultures 24 hours old We thought it desirable to test the method on a microbe which did not form such satisfactory cultures and we chose for this purpose the plague bacillus which, as is well known, in broth gives a flocculent sticky deposit at the bottom of the tube We used as disinfectants formalin, cyllin, and carbolic acid and broth cultures of plague, 48 and 72 hours old, well shaking and mixing before use Our results were disappointing We often obtained no growth at all in the subculture tubes and the experiments were therefore blanks, or we obtained quite erratic results which were useless for the purpose of arriving at the carbolic acid coefficient Investigating the causes of these results we found in the first place that, contrary to our preconceived idea, broth did not form a suitable culture medium for the test cultures Apparently, in our broth at any rate, a *minute* trace of plague does not grow at all freely in this medium and we found that nutrient agar was a much more suitable culture medium, giving results when the broth cultures under the same conditions were blanks Similarly a broth culture of plague even 72 hours old contains relatively few organisms, or these are aggregated into relatively few masses, compared with the broth cultures of typhoid, &c , and the chances therefore of obtaining a culture from the disinfecting solutions, even though the organisms are not destroyed, are small We therefore substituted for broth cultures suspensions of agar cultures, but as is well known there is great difficulty, owing to the stickiness of the growth, of preparing a uniform suspension and we found it necessary to add much larger quantities of the suspension, 0 5 cubic centimetre of a 48 hour agar culture, to the tubes of disinfectant, thereby reducing their strength somewhat This, however, for comparing disinfectants is of small moment as the results are still *comparative*, which is all that is required We also found it necessary to incubate the culture tubes for a much longer time, at least seven days, as after even five or six days a growth sometimes developed in what previously appeared to be a blank tube Having after a considerable amount of labour and the use of some hundreds of tubes of culture media thus cleared the way, we may give some of the results which we have obtained The results are best charted as follows —

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[3] See a discussion on the Pathology, Prognosis, and Treatment of Hæmatemesis, Brit. Med. Jour., Nov. 29th, 1902.

[1] Journal of the Sanitary Institute, vol. xxiv., Part 3, p. 424.
[2] Journal of State Medicine, vol. xii., No. 1, January, 1904, p. 41.

Test No 25, June 20th, 1904 —Bacillus Pestis (Laboratory Culture)

Sample	Dilution	Time culture exposed to action of disinfectant—minutes					
		2½	5	7½	10	12½	15
Formalin	1 in 10	*	*	*	*	*	*
,	1 ,, 20	*	*	*	*	*	*
,	1 , 30	x	*	*	*	*	*
Phenol	1 70	*	*	*	*	*	*
,	1 , 80	*	*	*	*	*	*

x = growth * = no growth

Test No 26, June 20th, 1904 —Bacillus Pestis (Laboratory Culture)

Sample	Dilution	Time culture exposed to action of disinfectant—minutes					
		2½	5	7½	10	12½	15
Cyllin	1 in 1500	*	*	*	*	*	*
,	1 2000	*	*	*	*	*	*
	1 , 2,00	*	*	*	*	*	*
	1 3000	*	*	*	*	*	*
Phenol	1 90	*	*	*	*	*	*

In all cases the subcultures were incubated for at least seven days at 37° C These two tests, which were preliminary ones after having arrived at the proper method, yield no result, the disinfectants being used in too great a strength

Test No 29, July 1st, 1904 —Bacillus Pestis (Laboratory Culture)

Sample	Dilution	Time culture exposed to action of disinfectant—minutes.					
		2½	5	7½	10	12½	15
Formalin	1 in 30	x	x	*	*	*	*
,	1 , 40	x	x	x	*	*	*
,,	1 , 50	x	x	x	x	x	*
Phenol	1 , 100	*	*	*	*	*	*

Test No 30, July 1st, 1904 —Bacillus Pestis (Laboratory Culture)

ample	Dilution	Time culture exposed to action of disinfectant—minutes					
		2½	5	7½	10	12½	15
Cyllin	1 in 3500	x	*	*	*	*	*
,,	1 , 4000	x	x	*	*	*	*
Phenol	1 , 100	*	*	*	*	*	*
,	1 110	?	x	*	*	*	*

From these two tests, performed at the same time, we see that 1 in 30 formalin and 1 in 4000 cyllin have the same germicidal action as 1 in 110 carbolic acid[4] The carbolic acid coefficient of formalin would therefore be $\frac{30}{110} = 0\ 27$ and of cyllin $\frac{4000}{110} = 36\ 36$

Test No 34, July 15th, 1904 —Bacillus Pestis (Virulent Culture)

Sample	Dilution	Time culture exposed to action of disinfectant—minutes.					
		2½	5	7½	10	12½	15
Cyllin	1 in 4000	x	x	*	*	*	*
Formalin	1 , 40	x	*	*	*	*	*
Phenol	1 , 110	x	*	*	*	*	*

From this test we may assume that a slightly stronger solution of cyllin—say, 1 in 3500—would have had a germicidal action equal to 1 in 110 carbolic acid The carbolic acid coefficient for formalin works out at $\frac{40}{110} = 0\ 37$ and for cyllin at $\frac{3500}{110} = 31\ 8$

Our conclusions are therefore 1 That the method, while a very simple and accurate one for organisms which form abundant, uniform, diffuse growths in young broth cultures, is not nearly so satisfactory for an organism that forms a scanty, flocculent, coherent growth in broth like the bacilli of plague or anthrax, in which cases a suspension of an agar culture is to be preferred 2 As the result of a large number of tests the carbolic acid coefficient of formalin for the plague bacillus averages 0 3 and that of cyllin averages 34 0

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[3] Brit. Med Jour July 2nd, 1904 p 15

[4] The fourth tube in the first column (i e 1 in 110 carbolic acid acting

HOSPITAL SATURDAY AT NEWTON ABBOT—£190 were received as a result of the recent Hospital Saturday collections at Newton Abbot (Devon), the amount being much in excess of the total of any previous year

HABITUAL INEBRIATES—At the meeting of the Monmouthshire Discharged Prisoners Aid Society held at Newport Town Hall on July 28th it was reported that five women belonging to Newport had been discharged from the Brentry Homes and in each case within seven days of their discharge they had been reconvicted of drunkenness

A CAUSE OF INTESTINAL OBSTRUCTION AFTER GASTRO-ENTEROSTOMY.

BY H. M. W. GRAY, M.B., C.M. ABERD., F.R.C.S. EDIN.,
SURGEON TO THE ABERDEEN ROYAL INFIRMARY.

THE patient, an unmarried woman, aged 31 years, was seen by me in consultation on the evening of May 15th, 1904. For some months she had suffered from severe "indigestion," intense epigastric pain, radiating to the back, occurring almost immediately after taking food. She had not vomited during this period but had noticed that the stools were very dark on several occasions. On May 14th she became suddenly collapsed and vomited a large quantity of blood. In spite of medical treatment the hæmatemesis was repeated several times, although not to such a large extent. The bowels were opened and the stool contained a large quantity of blood. On the evening of the 15th she became again so collapsed that death was thought to be imminent. She had recovered somewhat before I saw her. Her pulse was very feeble and irregular. It was occasionally as low as 120 but was usually considerably quicker. It was estimated that she had vomited between two and three pints of blood. By percussion of the shifting dulness, limited to the gastric area, it was found that the stomach contained at least a pint of blood. Nothing had been given by the mouth since the onset of the attack. These facts, considered along with the presence of the large quantity of blood in the stool, made the total blood lost amount to probably between four and five pints. It seemed that the bleeding had stopped and it was thought advisable to wait until the morning, as transference to hospital would have had a severe effect on the patient in her perilous condition. Morphine was given hypodermically and a careful watch was set. She passed a fairly good night but early the next morning she again vomited blood and was removed to hospital. On arrival there she vomited a small quantity of fresh blood, so an operation was carried out at once.

Chloroform was administered and three pints of saline solution were slowly infused into a vein at the elbow. The stomach was exposed by a free incision. Blood was seen to be present in a large amount in the stomach and in the whole length of the intestines. Nothing else abnormal about the stomach was detected by inspection or palpation. The blood was squeezed through the pylorus, the stomach was opened posteriorly and its interior was inspected. No ulcer was seen. A posterior retrocolic gastro-enterostomy was performed. Sutures alone were used.

The patient vomited early on the second day after operation. The vomit contained a small amount of "coffee-ground" material and was foul smelling. Five minims of liquid extract of cascara sagrada were given every hour but after three doses she became sick so it was intermitted for 12 hours and then begun again. An enema was given on the evening of the day of operation to clear the rectum; a tarry motion resulted. Every second day thereafter an enema was administered. On the fourth day the stool was free from blood.

About noon on the sixth day she complained of intermittent griping pain in the abdomen. This continued until the evening when it abated somewhat. It was thought probably to be due to flatus, although previously to this a turpentine enema brought away neither flatus nor fæces. A small dose of morphine was given. She was quite comfortable till 3 A.M. on the morning of the seventh day, when the pains began again and increased in severity as the effect of the morphine passed off. Vomiting occurred on two occasions. At 9 A.M. another turpentine enema was given but with no result. The facial expression was now somewhat drawn and anxious. Vomiting continued at intervals but the pains subsided considerably after the enema. The temperature and the pulse were unaffected. The latter had become reduced in frequency from 144 on the day of operation to 100–110.

Intestinal obstruction was diagnosed and immediate operation was advised. This was declined. I prescribed two drachms of magnesium sulphate by the mouth and eight minims of liquor strychninæ hypodermically. The immediate effect of this was to produce severe colicky pain and acquiescence in operation which was carried out at 4 P.M. It was then found that practically the whole of the small intestine had insinuated itself from left to right through the ring formed at the first operation by the peritoneum of the under layer of the mesocolon, that lining the posterior abdominal wall and forming the upper layer of the mesentery, and completed anteriorly by the gastro-jejunal junction. It was easily pulled back and the ring closed by suturing the under layer of the mesocolon to the upper layer of the mesentery to prevent recurrence of the hernia. Strangely enough, there was enormous distension of the colon with gas. It was found to be quite patent down to the rectum. It was accordingly punctured by a trocar and cannula and the gas let out. A silk suture was inserted to close the opening made by the trocar and a piece of omentum was stitched over that. The gastro-jejunal junction was found to be perfect. The patient vomited once during the evening after the operation but thereafter recovery was uninterrupted and she left the hospital on June 13th. She was seen on July 5th, when she looked extraordinarily well. She had suffered no pain, no indigestion, and no vomiting since her dismissal. The stools had been normal. She now made no restrictions in her diet.

I can find no record in the literature on gastro-enterostomy of such a post-operative condition. Moynihan mentions the occurrence in one of his cases of hernia into the lesser peritoneal sac through the opening, made at the operation, in the mesocolon. This, I think, was discovered post mortem. Both these forms of hernia can, of course, be prevented by the insertion of a few sutures. My action in administering drugs to produce increased peristalsis and pain in order to promote acquiescence in operation has been called in question by some of my medical brethren; I have no doubt of its justifiability. Had I left the patient alone and allowed the pains to develop in strength gradually she probably would not have agreed to operation for another 24 hours when her condition would have been much worse. In cases of acute intestinal obstruction there is often a lull in the symptoms after the storm of onset. This lull is too frequently augmented and prolonged by the use of morphine. I have also frequently noted an abatement after an enema has been administered and it was during such a lull that the subject of these remarks refused operation. For some years I have hinted that such a use of intestinal stimulants might be made and that the result would strengthen the diagnosis in cases of suspected intestinal obstruction but I should by no means advocate their use unless in very exceptional cases.

Aberdeen.

Clinical Notes:

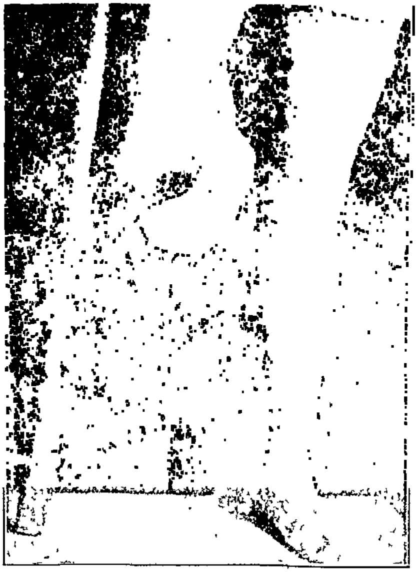
MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A CASE OF CONGENITAL ABSENCE OF ONE TIBIA.

BY H. LENNOX MUNRO, M.B., CH.B. EDIN.,
HOUSE SURGEON TO THE ROYAL LANCASTER INFIRMARY.

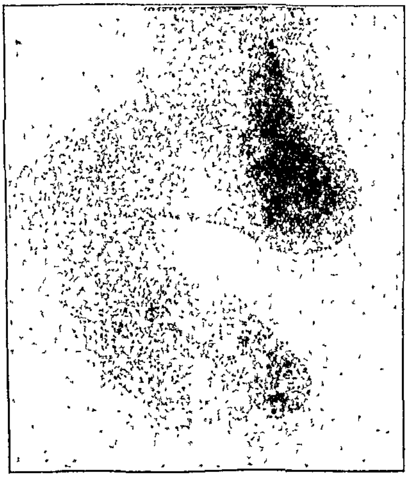
A CONGENITAL condition of deficiency or total absence of one or more of the bones of the body is not uncommon and in most cases results in the production of great deformity. Total absence of the tibia would appear to be met with very rarely, the radii being the bones which are most frequently wanting. Cases of absent tibia have been recorded by Bland-Sutton in the Transactions of the Pathological Society of London, vol. xliii., p. 124; by Treves in his "System of Surgery"; and by Parker in THE LANCET of May 27th, 1882, p. 870. For permission to publish the present case I am indebted to Mr. A. S. Barling, honorary surgeon to the Royal Lancaster Infirmary. In the cases described by the above observers the condition was associated with other pathological features, as absence of the radii and the presence of supernumerary digits. In this case the patient was a man, aged 27 years, of short stature and slight build, and the other limbs did not present any abnormal features. The appearance of the deformed limb is well seen in Fig. 1 and the actual outline of the bones is shown in the skiagram (Fig. 2). The thigh was wasted, the muscles being poorly developed; the patella was absent and no signs of the tibia could be made out on examination. The inner border of the leg presented a marked concavity directed inwards; the fibula was prominent and much curved. As the limb was allowed to hang down the plantar surface of the foot looked forwards, the hallux pointing outwards. The foot itself was well developed. The skiagram shows [the bones of the tarsus very much crushed together. The man earned his living by street hawking, and although he was unable to wear any form of artificial limb he firmly refused to consent to amputation.

FIG. 1.



Showing the condition of the limb in a case of congenital absence of the tibia

FIG. 2.



Skiagram showing the outline of the bones in the same case

Lancaster.

EYE-STRAIN AS A CAUSE OF HEADACHE.

By S. W. SUTTON, M.D., B.S. LOND.

ATTENTION having been recently drawn to this subject by Mr. Simeon Snell and others I am induced to send a note of a case I have recently seen for the sake of emphasising this point, especially that in spite of their simplicity and frequency the nature of such cases is apt to be overlooked.

I was asked to see a little English girl, aged nine years, whose sole complaint was said to be frequent headache for more than a year which would not yield to treatment. Her father assured me that it was distressing to the whole family to see such a little girl suffering so much from her head. The headaches had always been considered as "due to the liver" but medicines had given no relief. What struck me almost immediately at my first interview and gave me my first clue to the true nature of the case was this: here was a little well-nourished healthy looking girl who complained of [illegible] nd whose eyes were frequ[illegible] of the orbicularis muscle. Carefully avoiding anything like a leading question I asked the child—"Have you any idea what causes your headache?" to which she replied—"It always comes on after lessons and it is always worse on Tuesdays." The idea was at once scouted by the family and the governess said that such simple and short lessons as the child was put to could not possibly cause headache, although it was admitted that she habitually did more lessons on Tuesday than on other days, so I explained that while lessons meant to them "mental effort" to me the term suggested "ocular effort." After the use of atropin I found in each eye hypermetropia of 1·5 D. and prescribed spectacles accordingly, with the happy result that all headache has entirely ceased.

This case suggests one other point which is worth emphasising—viz., that when ordering spectacles we have to prescribe a spectacle-frame as well as certain lenses. I found that this little girl required a frame with the same breadth of bridge that I myself require, her eyes being unusually far apart.

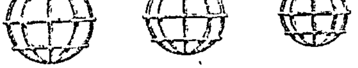
Dharmsala, Punjab.

NOTE ON DR. LANDMAN'S WIRE ARTIFICIAL VITREOUS.

BY JOHN R. ROLSTON, M.R.C.S. ENG., L.R.C.P. EDIN.,

SURGEON TO THE ROYAL EYE INFIRMARY, PLYMOUTH; OPHTHALMIC SURGEON TO THE ROYAL ALBERT HOSPITAL, DEVONPORT.

AMONG the various means which have been introduced for forming an artificial vitreous after excision of an eyeball I think the wire spheres of Dr. Landman of the United States of America deserve recognition. It is claimed for them (1) that they do not require any special instrument for their introduction, as in the case of the smooth glass or metallic spheres; (2) that their retention within the tissues is insured by granulations springing up between the meshes; and (3) that they are very light. They are made in three sizes, as in the illustration, and of pure silver wire. I have used them in about ten suitable cases during the last few months and my experience is that they are very easily inserted, cause little or no irritation, and the after-results as regards movement are very satisfactory. The method I have adopted is after excising the eye to pass a purse suture of catgut around Tenon's capsule, using a plug of lint saturated with adrenalin to arrest hæmorrhage, insert the



wire sphere, and draw the ends of the purse suture together and tie them. I then suture the conjunctiva over the buried sphere. These spheres have been made for me by Messrs. Down Brothers, St. Thomas's-street, Borough.

Plymouth.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv., Proœmium.

MILL-ROAD INFIRMARY, LIVERPOOL.

A CASE OF TROPICAL ABSCESSES OF THE LIVER WITH SOME UNUSUAL COMPLICATIONS.

(Under the care of Dr. NATHAN RAW.)

FOR the notes of the case we are indebted to Dr. Ernest N. Cunliffe, assistant medical officer.

A man, aged 27 years, a discharged soldier, was admitted to the Mill-road Infirmary, Liverpool, on Feb. 17th, 1904, complaining of persistent diarrhœa, severe abdominal pain, and a troublesome cough. He stated that he was in perfect health when he landed in England on Jan. 14th, 1904, after a six years' residence in India. The day of landing he was seized with dull, aching pains in the upper part of his abdomen accompanied by diarrhœa. His bowels were moved eight or nine times daily; he had never noticed any blood or slime in the motions. He did not lie up till a week after the onset of his illness, but he was then obliged to take to his bed on account of the increasing severity of the pains. About this time he first began to be troubled with cough and expectoration; he was quite sure that he had had the diarrhœa a clear week before the cough commenced. On two occasions he had attacks of epistaxis but he had not been troubled with headache or deafness. There had been no rigors but he perspired a little at nights. The diarrhœa, abdominal pains, and cough continued up to admission to hospital. His previous medical history was good. He had never had syphilis, malaria, or dysentery, and he was confident that during his residence in India he had never been troubled with diarrhœa or hæmorrhage from the bowel.

On examination it was evident that the man was acutely ill. He was well nourished and well developed. The face was flushed and the tongue was dry and thinly coated with a greyish fur. The pulse averaged 120 beats per minute and was of low tension but of fair volume. Respirations averaged 30 per minute. His temperature on admission was 101·8° F. Examination of the abdomen showed general distension with pain and tenderness in the right hypochondrium. No rose spots were present. The lower ribs on the right side were unduly prominent and the superficial veins coursing over the right costal margin were distended. The lower edge of the liver was defined as running two inches above the umbilicus. The surface of the liver could not be palpated with certainty on account of the hepatic tenderness but appeared to be of normal contour. The spleen could not be felt. The hepatic dulness extended from the third intercostal space to a level two inches above the umbilicus in the right nipple line. The splenic dulness was not increased in extent. On examination of the chest the cardiac impulse was found to be situated in the sixth intercostal space, two inches outside the nipple line. The cardiac sounds were of good quality with no bruits. On inspection the right side of the chest was more distended and moved less freely than the left. On palpation vocal fremitus was completely absent over the right base and impaired in the interscapular, axillary, and suprascapular regions of the same side; anteriorly and on the left side it was normal. There was dulness to percussion of the right base with impairment of resonance of the right interscapular and suprascapular regions. The right axilla was completely dull. Skodaic resonance was present over the anterior aspect of the right chest as far down as the third intercostal space. The left chest gave a normal note throughout. On auscultation of the right side of the chest breath sounds were absent over the base and diminished in the supra- and interscapular regions. Anteriorly, over the area of Skodaic resonance, puerile breathing was audible. Faint bronchial breathing, bronchophony, and whispering pectoriloquy were heard over the front part of the axilla. Ægophony was nowhere observed. The only adventitious sounds were scanty pleuritic rubs heard anteriorly in the third intercostal space. The auscultatory signs of the left side of the chest were normal. Mensuration showed an increase in girth of three-quarters of an inch of the right side over the left.

An aspirating needle was introduced into the eighth intercostal space on the right side, just outside the angle of the scapula, but only a few drops of blood were obtained, the needle apparently entering solid substance. On introducing the needle a second time about two inches lower down a small quantity of blood-stained pus of a thin consistency was obtained, but free evacuation of the pus could not be obtained. It was decided, therefore, to resort to surgical treatment. The general condition was one of increasing gravity. The diarrhœa still continued, the stools being of a semi-fluid consistency but only on one occasion did they contain shreds of mucus. Blood was never present. The temperature ran an irregular course, alternating between 98° and 102°. The patient was freely stimulated and on Feb. 20th was taken to the theatre and lightly anæsthetised by equal parts of chloroform and ether. Dr. Nathan Raw performed the operation. An exploring syringe was introduced in the right midaxillary line through the ninth intercostal space and a quantity of yellow-coloured pus was withdrawn. The overlying skin was incised and the pleural cavity was opened and about half a pint of sweet-smelling pus was evacuated. Introducing a finger through this opening it was obvious that a localised cavity lying between the diaphragm and the chest wall had been opened. The dome of the diaphragm was evidently pushed up to a considerable extent. A portion of rib was next excised and an opening was made in the diaphragm, when about one and a half pints of darker-coloured pus escaped from a large abscess in the substance of the liver. Examination of the chest showed that the heart had not, however, completely returned to its normal position in spite of the evacuation of such a large quantity of pus and an area of dulness still remained in the axilla. The patient, who up to this point had stood the operation well, now began to show signs of collapse and therefore a large drainage-tube was introduced through the opening in the diaphragm and he was taken back to the ward. He quickly recovered from this temporary collapse and next day his general condition was wonderfully improved. His breathing, though easier, remained somewhat embarrassed and the dulness of the axilla persisted and the cardiac impulse was still located outside the nipple line. He was progressing favourably, when suddenly, on Feb. 22nd, two days after the operation, a profuse discharge of blood, some clotted, some freshly shed, took place from the rectum. A large amount of mucus was mixed with the stool. An enema of starch containing 30 minims of tincture of opium was given and 30 minims of turpentine were administered by the mouth. This treatment checked the hæmorrhage for several hours, but a second attack of bleeding even more severe than the former occurred and though adrenalin hydrochloride was given the patient died from collapse before intravenous injections of normal saline solution could be performed.

Necropsy.—At the post-mortem examination it was found that the lower bowel, especially the cæcum and the colon, was the site of acute dysenteric ulceration, the mucous membrane being acutely inflamed and covered with a thick deposit of blood-stained mucus. The small intestine was healthy. The liver was considerably enlarged and weighed three and three-quarter pounds. In the right lobe were situated two tropical abscesses. The larger one was of about the size of a cocoanut and had been opened at the operation. It was situated on the upper and lateral aspect of the liver and had become adherent to the diaphragm. It still contained a small quantity of rather thick pus, which had not the chocolate colour so characteristic of tropical abscesses but was of a dark yellowish colour. The other abscess was of about the size of a Tangerine orange and was situated just above the gall-bladder on the anterior aspect of the liver and contained pus of similar characters to that found in the larger one. The pus was examined and was found to contain streptococci but no definite amœbæ coli. In the right pleural cavity an interesting condition of affairs was revealed. In its lower part was a small localised empyema, lying between the right dome of the diaphragm and the chest wall and cut off superiorly by dense adhesions from the general pleural cavity. This empyema had been opened at the time of the operation. It had evidently corresponded roughly with the position of the hepatic abscess, being separated from it by the diaphragm. In the upper compartment of the pleural cavity a quantity of perfectly clear, greenish fluid characteristic of serous pleuritic effusions was found. The right lung was floated upwards and forwards, its lower lobe being partially collapsed. The left side of the chest was normal both as regards the lungs and pleura. The heart and other organs were healthy.

Remarks by Dr. CUNLIFFE.—This case presents several features of interest both as regards symptomatology, diagnosis, and complications. It is somewhat unusual for a case of tropical abscesses to run so acute a course. The absence of any history of previous dysenteric trouble is also interesting. When first examined the diagnosis evidently lay between tropical abscess and empyema. The physical signs were consistent with either. The early occurrence of diarrhœa before any chest trouble was observed favoured the former diagnosis. Enteric fever was excluded by the absence of rose spots, enlarged spleen, headache, and by the appearance of the tongue. The termination of the case was unusual, for it is rare for death to take place in dysentery due to sudden profuse hæmorrhage. The most interesting feature, however, is the occurrence on the same side of the chest of [illegible] ic effusion. The right pleural [illegible] ded into two compartments [illegible] between the pleura covering [illegible], and the pleura lining the inside of the chest. In these separate compartments effusion had taken place; in the upper one it was of a serous nature, but the position of the lower compartment separated from the hepatic abscess by the diaphragm had caused the contents of the lower one to be of a purulent nature. The empyema only was tapped at the time of the operation and the presence of the pleuritic effusion in an upper compartment explains the dulness persisting in the axilla and the failure of the heart to return to its normal position. I have ventured to record this case because it illustrates several points of interest occurring in a disease which in this country we have not often the opportunity of observing in an acute form. I am indebted to Dr. Nathan Raw for his kind permission to publish these notes.

PRETORIA HOSPITAL.

A CASE OF ACUTE INTUSSUSCEPTION IN A CHILD FIVE MONTHS OLD; OPERATION; RECOVERY.

(Under the care of Dr. ALFRED W. SANDERS.)

THE patient, a healthy breast-fed male child, was taken suddenly ill about 1 o'clock on Jan. 4th, 1904, and Dr. Sanders was called to see him the same day at 7 P.M. He had attended the mother during her confinement and had not since seen the child but was told that except for occasional slight constipation he had been quite well. The history of the onset was as follows. The child had during the morning been in his usual good health and his bowels had acted naturally. While he was taking the breast he suddenly began to cry as if in pain, turned very pale, and shortly afterwards vomited. He retched and vomited at intervals after this and passed two motions which were rather green and slimy but contained no blood. [illegible] and at [illegible] at 7 o'[illegible] lips. [illegible] The pain was evidently paroxysmal and during the attacks he writhed about and cried pitifully. On examining the abdomen—which was somewhat flattened—a tumour lying above and to the right of the umbilicus was readily detected. The diagnosis of acute intussusception having been made Dr. Sanders advised a consultation and recommended immediate operation. Dr. G. Thornton, a colleague at the hospital, kindly saw the case within a short time and came to the same conclusion. The child was taken at once to the Pretoria Hospital and at 9 P.M. Dr. Sanders operated, Mr. J. S. P. Stewart assisting and Dr. Thornton giving the chloroform. An incision was made just to the right of the middle line and extending one and a half inches above and below the umbilicus. This situation was chosen as being that most likely to give ready access to the tumour with the least exposure and manipulation of the abdominal contents. The intussusception was easily reached and when brought down into the wound was seen to be of the ileo-cæcal variety, the tip of the appendix just presenting at the lower part. Reduction was effected with moderate ease by the invaginated portion being expressed through the sheath. The portions of bowel affected were considerably congested and Dr. Sanders did not think the condition could have been relieved by injections. The wound was closed with silkworm gut sutures passing through all the layers of the abdominal wall. The child stood the operation, which lasted 15 minutes, very well. He was not sick after it and took the breast one hour later. Being restless during the night he was given two one-minim doses of tincture of opium. On the morning following the bowels acted, the motion consisting almost entirely of blood and mucus, and the motions for a day or two were greenish in colour. The recovery was gradual and complete; the temperature ranged between 102° and 103° on the next day but afterwards declined gradually, reaching the normal on the fifth day, while the pulse-rate fell from 144 to 112. The abdomen did not become distended and the bowels acted naturally. No drugs except two one-grain doses of Dover's powder—which were given to induce sleep—were needed. On the 11th the patient was discharged quite well and the stitches were removed on the 16th, the wound having healed completely. A tight binder was worn for some time and now the scar is quite sound. Dr. Sanders was unable to assign any cause for the occurrence of the intussusception.

Reviews and Notices of Books.

Practical Gynæcology: A Comprehensive Text-book for Students and Physicians. By E. E. MONTGOMERY, M.D., Professor of Gynæcology, Jefferson Medical College; Gynæcologist to the Jefferson Medical College and St. Joseph's Hospitals; Consulting Gynæcologist to the Philadelphia Lying-in Charity. With 570 illustrations, nearly all of which have been drawn and engraved specially for this work, for the most part from original sources. Second revised and enlarged edition. London: Rebman, Limited. 1904. 8vo, pp. 900. Price 25s. net.

IN the second edition of this work Dr. Montgomery has carried out an extensive revision of the contents. A large part of the work has been rewritten and its size has been increased by some 70 pages. The author in two new sections discusses the value of the Roentgen rays and the Finsen light in the treatment of gynæcological affections. He comes to the conclusion arrived at by most writers on this subject that so far their application in this branch of medicine is a very limited one indeed; whether in the future it may become more extended remains to be seen. A large number of new figures have been added, replacing in many instances figures which were hardly worthy of the book. In the chapter on Endometritis a series of illustrations representing the microscopical appearances are given and these are a great improvement on the old ones. We notice similar additions in the section on diseases of the tubes and cancer of the uterus. The interesting subject of extra-uterine gestation is very fully discussed and this chapter has been largely rewritten. Primary abdominal fœtation is not accepted by the author as proved and he quotes the case of Tuholske where the placenta was imbedded on the liver as an example of secondary implantation. In cases of advanced extra-uterine gestation where the child is living the author recommends waiting until the eighth month so as to afford the fœtus the best opportunity of being born alive. He considers, as the fœtus may be well developed, that operation should be postponed to such a stage as will give it an opportunity of a continued existence. The statement on p. 637 that the occurrence of fibroid tumours with pregnancy entails a maternal mortality of 50 per cent., and a fœtal loss of 75 per cent. is not quite correct. It would appear as if the author were quoting the results obtained before the introduction of antiseptics. For example, Susserott, writing in 1870 of 147 cases, met with a maternal mortality of 53 per cent. and a fœtal mortality of 66 per cent., while Lefour in 1880 had a maternal mortality in 286 cases quoted by him of 49 per cent. and a fœtal mortality of 77 per cent. Pinard, however, writing in 1901, quotes 84 cases of this complication with a maternal mortality of only 3·6 per cent. and a fœtal mortality of 23·6 per cent.—very different figures to those quoted by Dr. Montgomery and no doubt representing much more accurately the true results of cases of pregnancy and labour complicated by fibroid tumours. In our experience the danger of this condition is often grossly exaggerated in the writings more especially of gynæcologists who are apt to forget the large number of cases seen by the obstetrician which occur with no complications at all. In the section on the operative treatment of fibroid tumours the author has added a description of the various methods of performing the operation of panhysterectomy, and no doubt in this case he is wise, since it is probable that this operation will be considered in the future the best one for dealing with these tumours. The work of revision seems to have been carried out carefully and the book is a fair example of its class, but there is no reason why it should replace the usual text-books with English students.

Studies from the Rockefeller Institute for Medical Research.

Reprints. Vol. I. 1904.

THE Rockefeller Institute for Medical Research was founded in 1901 for the purpose of promoting original research into the causes and treatment of disease. From the introduction to the first volume of studies carried out under the auspices of this liberal endowment we gather that during the years in which the organisation of the institute was being perfected and buildings were being erected the funds have been employed in aiding researches already in progress and encouraging others which seemed promising. In consequence of the grants thus given many workers have been enabled to carry out investigations in various American and European laboratories. The results of 27 of these investigations are recorded but no attention is drawn to what is perhaps the most important aspect of the application of the funds of the institute in this way—viz., the creation of a body of trained workers whose ability has already been put to the test and who will be able to occupy and to turn to account the resources of the laboratories now approaching completion.

The researches recorded have already been published in various periodicals. They cover practically the whole field of experimental medicine. From the standpoint of the practice of medicine five papers on Dysentery are of moment. These seem to leave little room for doubt that acute dysentery, whether sporadic, institutional, or epidemic, in all parts of the world is due to one and the same organism—the bacillus dysenteriæ (Shiga). The results of a study of the acid-resisting group of bacteria have also direct bearing on the practice of medicine and hygiene. As is well known, this group includes also the tubercle bacillus. The authors of the paper hold the designation "bacillus" to be a misnomer and assert that actinomyces would often be the more correct term. Some of the acid-resisting bacteria found in milk, butter, and so on, are capable of causing nodular lesions suggestive of tubercles but distinguishable from them. The majority of these bacteria may be identified from true tubercle bacilli by their inability to resist decolourisation by a 30 per cent. solution of nitric acid in water. We cannot fail to be impressed by the risk of attaching exaggerated significance to so-called specific staining reactions. Much confusion and needless repetition of work would be avoided if the fact is recognised that there is no specific staining reaction either for bacteria or for cellular structures, not even excepting the chromatin elements *par excellence* of the cell.

The papers of highest theoretical promise refer to experimental glycosuria and the new methods which have been applied to the study of this disease. Other researches on cobra venom, bacteriolysis, and agglutination, and various contributions to physiological and pathological chemistry complete a valuable volume of reprints. It is to be hoped that the Rockefeller Institute will fulfil the object of its generous creator and succeed in discovering the investigator who is born, not made, and who only requires proper facilities to enable him to apply his genius to the advancement of medical science and practice.

Text-book of Histology, including the Microscopic Technic.

By Dr. PHILIPP STÖHR, Professor of Anatomy at the University of Würzburg. Translated from the tenth German edition by Dr. EMMA L. BILSTEIN. Edited, with additions, by Dr. ALFRED SCHAPER, Professor of Anatomy at Breslau. With 353 illustrations. London: Rebman, Limited. 1904. 8vo., pp. 485. Price 14*s*.

THE first English Edition of this authoritative work was made from the seventh German edition in 1898. The additions since that date in this translation which has been made from the tenth German edition cover about 60 pages and the increase in the number of illustrations is 61; several of the new illustrations are coloured. The additional chapters deal with the Form of Glands, based on the investigations of Maziarski; the Histological Characters of the Spleen, based on the researches of Weidenreich; of the Urinary Bladder, based on the researches of Lendorf; the Seminal Passages, following the researches of Felix; and the Development of the Hairs, based on the author's researches. The morphology of the cell and the structure and chemistry of the tissues are more fully given than in the previous edition. The technical part of the application of formol and its mixtures is given in some detail. The general arrangement of the chapters is to describe an organ or tissue—as, for example, the kidney, lung, bone, or thymus—reference being made to the illustrations. Directions are then given instructing the student in the mode of hardening or, if need be, of decalcifying, staining, and mounting. The additions are skilfully interpolated and are not unnecessarily prolix. Thus, in the previous edition, speaking of the development of bone and of the origin of marrow, it is merely stated that the primary marrow cavity is a little bay filled with blood-vessels and with cells, the latter in the further progress of development becoming either marrow cells or fat cells or osteoblasts—that is, bone-forming cells. In the new edition the process is more fully and exactly described in the following terms, the description being accompanied by new coloured woodcuts: "The marrow cavity is now a bay-like space filled with blood-vessels and with primary bone marrow, that is with anastomosing branched connective-tissue cells. Some of these cells—the osteoblasts—grow rich in protoplasm and apply themselves in the manner of a one-layered epithelium to the walls of the marrow cavity. These produce bone; meanwhile leucocytes appear in ever-increasing numbers and finally form the chief mass of the cellular elements of bone marrow, therewith converting the primary marrow into the red marrow. Some of the branched connective-tissue cells retain their form and later with a fine fibered connective tissue constitute the supporting framework of the bone marrow. Others of these cells become fat cells." Though Sharpey's name is not mentioned but little, if any, advance appears to have been made in osteogeny since his observations were published. The following gives one of 20 methods of staining preparations and describes von Gieson's method: "Treat sections [of any tissue] with Hansen's hæmatoxylin for 30 minutes. Place the overstained sections in *a*, five cubic centimetres picrofuchsin, 1 3 minutes; *b*, five cubic centimetres distilled water, 10–13 seconds; *c*, five cubic centimetres 90 per cent. alcohol, one minute; *d*, five cubic centimetres absolute alcohol, two minutes; *e*, five cubic centimetres xylol, and when thoroughly cleared *f*, xylol balsam. Result, connective tissue shining red, elastic tissue and muscular fibres yellow, and nuclei brown." Further directions are given to fix the colours. Professor Stöhr's work is a valuable one and may be read with advantage with one or another of the histological text books of home production.

Immune Sera Hæmolysins Cytotoxins and Precipitins. By Professor A. WASSERMANN, M.D. Authorised translation by CHARLES BOLDUAN, M.D. London: Chapman and Hall; New York: John Wiley and Sons. 1904. 12mo, pp. ix.-76. Price 4*s.* 6*d.* net.

IN the preface to this little book the author with characteristic modesty explains that his object is "to introduce my colleagues to the essentials of the subject" and a careful perusal of the 76 small pages of fair sized print will undoubtedly convince the reader that they are admirably adapted to that end. To the busy physician who sees that so much attention is being devoted to the elucidation of problems connected with the constituents of immune sera, no less than to the student just entering on the study of comparative pathology, this work will be very welcome, for in short clear sentences illustrated by well chosen experiments dealing with fundamental facts Professor Wassermann sets out the chief of the elementary data relating to hæmolysins, agglutinins, cytolysins, and so on, and their antibodies whether met with in nature or produced as the result of animal experimentation; he also demonstrates the close family relationship existing between these complex bodies and explains their modes of action and interaction.

Dominated as the whole subject of serum immunity is by that brilliant conception of Ehrlich—the side chain theory of immunity—it is not surprising to find that the author who has himself done much good work on similar lines gives his almost unqualified adherence thereto and employs it with a clearness of diction as pleasant as it is intelligible, to explain the various phenomena associated with hæmolysis and cytolysis. Like Ehrlich Professor Wassermann supports the view of the plurality of complements, interbodies, and the like; and also (p. 24) the theory of the formation of tetanus antitoxin by the cells of the central nervous system, a theory upon which much doubt has been thrown by the recent work of Meyer and Ransome.

Perhaps the most interesting and at the same time the most suggestive section in the book is that dealing with the cytotoxins and their antibodies, for the researches of von Dungern which have resulted in the production of an anti serum capable of destroying the ciliated tracheal epithelium of the ox at once lead to speculation as to whether it is in this direction that we must look for a therapeutic agent in the treatment of epithelial cells of pathological origin. The practical applications too of the precipitins are also touched upon and the author gives a short account of his method of differentiating albumins, laying particular stress on its value to the medical jurist in differentiating the blood of man and closely allied apes from that of other mammals, and to the food inspector in detecting the substitution of horse flesh for beef. To the translator we would offer our congratulations on the manner in which he has presented Professor Wassermann's lectures to the English reader; at the same time we wish he could have seen his way to adding an index as well as the very complete table of contents.

Atlas of the External Diseases of the Eye. By Professor Dr. O. HAAB of Zurich. Authorised translation from the German, edited by G. E. DE SCHWEINITZ, A.M., M.D., Professor of Ophthalmology in the University of Pennsylvania, U.S.A. With 98 coloured lithographic illustrations on 48 plates. Second edition. London, Philadelphia, and New York: W. B. Saunders and Co. 1903. Crown 8vo. Price 13*s.* net.

THIS work is a translation of one of the hand atlases of Professor O. Haab and is a companion volume to his "Ophthalmoscopy" which we had recently occasion to review in these columns. That work was devoted to the representation of the internal diseases of the eye as seen with the ophthalmoscope; the present one deals with the external diseases of that organ and will probably prove more generally useful and attractive. The general practitioner, if unfamiliar with the ophthalmoscope or indisposed to rely upon his own diagnosis of the internal affections of the eye, such as optic neuritis, optic atrophy, or choroidal trouble, may, without derogating from his position as a man of sound information, recommend a patient with failing vision to apply to an expert, but such patient would call his general knowledge in question were he unable to recognise and to treat an external disease which is obvious to the most casual observer. The plates before us enable him to do this with ease. There are few of the commoner affections of the eye and its appendages, except perhaps, nævus, which are not here represented, and generally speaking with great care and fidelity to nature. They have been executed at the lithographic institute of Reichhold of Munich from drawings made by Mr. J. Fink, and they are so true that it is not difficult to name them without reference to the legend on the opposite page. Amongst the best are those exhibiting the various forms of conjunctivitis which accompany or follow gonorrhœa, diphtheria, and other infectious diseases. The text, which extends over 280 pages, is a running commentary on the drawings with, of course, explanations of the appearances they present. It contains a good section entitled Detection of Malingerers. Simulated amblyopia is admittedly a very difficult problem to solve if the supposed impairment of vision is only slight and the deceiver be careful to avoid exaggeration in his statements or if he knows something of the tests to which he will be subjected. Probably the employment of prisms scientifically applied is the most effective method of exposing the cheat. Much credit is due to Messrs. Saunders for presenting to the profession an English translation of so useful a book.

LIBRARY TABLE

The Care and Feeding of Children. By L. EMMETT HOLT, M.D. With an Introduction by ERIC PRITCHARD, M.D. Third edition. London: Sydney Appleton. 1904. Pp. 150. Price 2*s.* net.—Dr. Holt is so well known as one among the first authorities upon the diseases of children, their care, their feeding, and their upbringing that it seems superfluous to praise the little book now before us. Its sub-title is "A Catechism for the Use of Mothers and Children's Nurses," and this admirably describes the scope and aim of the work. It is written in simple language and nearly every imaginable point that can raise a doubt in the mind of one having the care of a child appears to be discussed. The English reader may be reminded that the word "rare," p. 112, as applied to meat does not mean "uncommon" but simply "underdone." The section on feeding is altogether admirable and the whole book can be strongly recommended to those for whom it is written and to many young practitioners as well.

Murray's Handbook for Switzerland. Nineteenth edition. London: Edward Stanford. 1904. Pp. cvi.—555. Price 10*s.*—Murray's Handbook to Switzerland was first published 66 years ago and the present, the nineteenth edition, has been thoroughly remodelled and revised. These extensive alterations have been necessitated by the great changes which have occurred within the last few years in Swiss methods of travel, such as the opening of many mountain railways. No one, of course, can really test the excellence or otherwise of a guide-book without going to the places mentioned therein but the name of Murray is a guarantee for goodness in a guide-book and this tradition loses nothing by the publishing having been transferred to the house of Stanford. The book is full of information which is very clearly set out and the instructions to travellers at the beginning are very good and greatly enhanced by the presence of 34 maps and plans.

Devices and Desires. By P. H. Lulham, M.R.C.S., L.R.C.P. London: R. Brimley Johnson. 1904. Pp. 211. Price 3*s.* 6*d.* net.—Mr. Lulham's verse is graceful and musical if not of a very high order and his ear but seldom fails him. But he has the faculty of painting landscapes in words, as in "November," "Red Dawn," and "A Winter Morning." We must say that we envy Mr. Lulham's poetic fancy which enables him to visualise such a charming rural scene as he gives us from the rattle of a milk-cart heard in the early morning. But we take it that he does not live in London. "Loss" is worthy to be set to music and the "Christmas Hymn" breathes the true spirit of Christmas.

JOURNALS AND MAGAZINES.

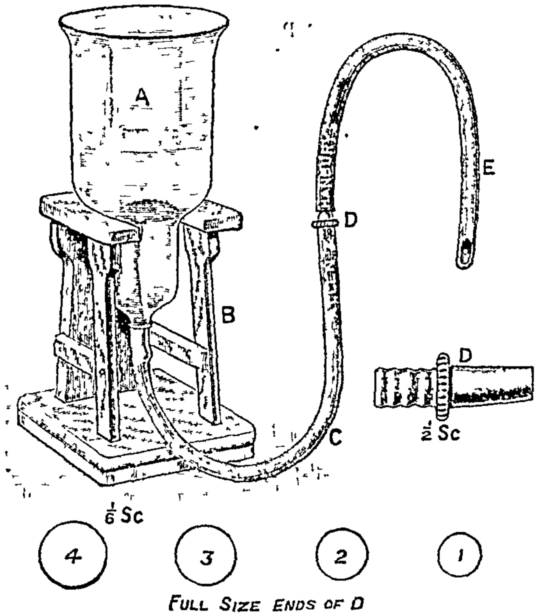
The Quarterly Journal of Microscopical Science. Edited by E. Ray Lankester, F.R.S., assisted by Adam Sedgwick, F.R.S., W. F. R. Weldon, F.R.S., and Sydney J. Hickson, F.R.S. With lithographic plates. London: J. and A. Churchill. Vol. 48, Part I., July, 1904. Price 10*s.*—The articles contained in this number are: 1. On the Branchial Vessels of Sternaspis, by Edwin S. Goodrich, M.A. This is a careful description of the branchial vessels of this chætopod, adding to and correcting the statements of Rietsch and of Vejdovsky, with two plates. 2. The Middle Ear and Columella of Birds, by Geoffrey Smith, B.A., with seven figures in the text. 3. Notes on Rhabdopleura Normani, Allman, with a plate. 4. Some Observations on the Anatomy and Affinities of the Trochidæ, by W. B. Randles, B.Sc. Lond. The anatomy of this group of molluscs is given in full detail and there is a good bibliography. 5. The Anatomy of Pœcilochætus, Claparède, by E. J. Allen, D.Sc., with six plates and one figure in the text. This is an important memoir very well illustrated. 6. Notes on Sporozoa, by H. M. Woodcock, B.Sc. Lond. The author of this article gives the results of his examination of Klossiella muris, a new genus and species of Coccidiæ found parasitic in the kidneys of the mouse. It is extremely small.

The *St. Bartholomew's Hospital Journal* of July 15th is a special number devoted entirely to the recent laying of the foundation-stone of the new buildings by His Majesty the King. A full account of the proceedings at the ceremony is given together with numerous illustrations and altogether the number forms a fitting memento of an auspicious occasion.

New Inventions.

AN IMPROVED APPARATUS FOR AUTO-LAVAGE OF THE STOMACH.

In cases where regular washing of the stomach is necessary the operation will in most instances eventually devolve upon the patient himself and it becomes of the greatest importance to provide him with an apparatus which will make it as easy for him as possible. The disadvantages of the ordinary funnel set of apparatus have been pointed out by me elsewhere.[1] The funnel with narrow thick-walled stem and the glass connecting piece, which cannot be easily detached during use, import needless and gratuitous difficulties, but by a little modification and the addition of a stand in which the funnel can be placed, an arrangement can be assembled which can be used single-handed with great ease. There are several little points which are not usually troubled about by instrument makers but which make all the difference between a practicable and an impracticable device. In the first place, at no point must the calibre of the channel through which the contents of the stomach pass be less than that of the stomach tube. This is obvious, as otherwise one loses all the advantage of a larger tube. In the apparatus usually supplied by the shops there are two points which are narrower than the calibre of the stomach tube—i.e., the neck of the funnel and the glass connecting piece between the stomach tube and the rest of the apparatus. Secondly, it is often necessary to disconnect the stomach tube during the act of lavage to blow down it and to dislodge impacted fragments of food. This is impossible when the connexion is a piece of glass tubing often wired on. In the apparatus which I have devised and which my patients have now used for some time I have attempted to remove these disabilities and, I hope, with success. The apparatus consists of a funnel (A) of such a shape that it will sit easily upon the stand (B). The stem has a bore larger than that of the largest stomach tube and the use of a rubber tube (C) of such a size that it will fit easily over it is rendered possible by the large size of the proximal end of the connecting piece (D). The connecting piece (D) is furnished with a conical extremity to fit into the stomach tube, the end being sharp, and thus presenting no obstruction to the flow through it. In fact, if a connecting piece be selected the end of which is a trifle larger than the calibre of the stomach tube there will be an uninterrupted passage of the same size from the eye of the stomach tube right up to the funnel. These connecting pieces are made in four sizes, shown at (1), (2), (3), and (4). The most important novelty about the apparatus



Full Size Ends of D

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[1] Manual of Intra-gastric Technique, p. 87.

is the weighted stand in which the funnel is placed whilst *pouring the water into it Both hands of the patient are left* at liberty and he is enabled to go through the operation of lavage unaided without the least difficulty The use of the stand will also be found of great assistance by the physician when washing out the stomach and no one who has once experienced the convenience of it will readily revert afterwards to the old method The apparatus is manufactured by Messrs Allen and Hanburys

Harley street, W GEORGE HERSCHELL, M D Lond

A NEW INHALER

Messrs Down Brothers have constructed for me a modification of Dr J F W Silk's excellent metal inhaler for A C E mixture which should prove a convenience to practitioners desiring to have the facility for administering any of the usual anæsthetics without carrying a separate inhaler for each As so modified the inhaler may be used for chloroform, mixtures of chloroform and ether ether, ethyl chloride or nitrous oxide The chief alterations and additions which I have made in Dr Silk's model are as follows

1 For use with chloroform (*a*) A tap inserted at the nasal side of the inhaler permits the metal part to be used as the face piece of a Junker's inhaler by attaching the tubing of the bellows to the tap, and I have had the holes of the lid enlarged so as to allow a total of more than a square inch of air way through the lid (*b*) If it be preferred instead to administer chloroform or mixtures of chloroform and ether by the drop method then the lid being opened a piece of lint can be introduced and pressed down to the drip diaphragm" (instead of the sponge, as in Dr Silk's instrument) by means of an expanding spring-clip (*vide* Fig 1).

FIG 1

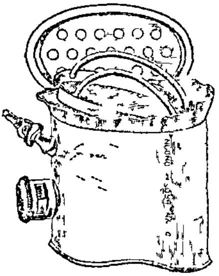
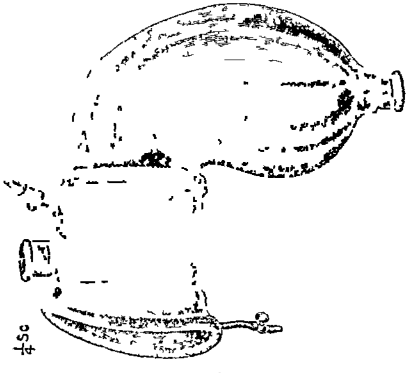


FIG 2



2 For use with ether a detachable rubber cushion face piece and *detachable* d by withdrawing the lint and instead a sponge and attaching piece (as in Fig 2) an inhaler inhaler is produced, with the same advantages of wide bore and ease of respiration The whole apparatus can be easily sterilised by boiling except of course the sponge

3 With the apparatus thus arranged as a closed inhaler ethyl chloride may be administered alone or as a preliminary to ether by spraying it upon the sponge

4 If it be desired to use the inhaler for nitrous oxide alone the sponge or lint is withdrawn and the rubber face piece and bag are attached The expiratory valve on the face piece is opened and rubber tube conducting the gas is connected with the stopcock on the face piece If desired air may be admitted by opening the slot in the distal end of the bag Respiration is particularly quiet and easy with this inhaler under nitrous oxide and I have also found it to work satisfactorily with any of the anæsthetics mentioned

Bath T WILSON SMITH M D Lond M R C P Edin

THE
BRITISH MEDICAL ASSOCIATION.

MEETING AT OXFORD

THE SECTIONS.

OBSTETRICS AND GYNÆCOLOGY

FRIDAY JULY 29TH

THE acting President Sir ALAN REEVE MANBY (East Rudham) called upon Dr A W ADDINSELL (London) to read his paper entitled

A Further Contribution towards the Study of the Natural History of Tubal Gestation

Dr Addinsell reviewed the conditions bearing on the treatment of cases of tubal gestation, tubal abortion, and rupture in tubal gestation He gave a careful description and classification of the clinical symptoms diagnosis, and the various indications for operative and expectant treatment according to the circumstances of each case The main contention of the paper went to show that often the pathological results and conditions following on tubal abortion and rupture especially in the earlier months tended to clear up and the patients to recover without the need for any surgical interference He quoted cases illustrating his contention and ended an instructive and interesting paper with a complete and exhaustive list of the various phases and clinical conditions of cases in which an expectant line of treatment was called for and those cases in which operative interference was either immediately or remotely necessary

Dr C E PURSLOW (Birmingham) discussed the difficulties of diagnosis and the indications for and against operation and quoted an illustrative case in which ectopic gestation with its consequences were found on operation although the case was one in which a diagnosis of ruptured gastric ulcer had previously been made

Dr E T DAVIES (Liverpool) thought that the main difficulties of deciding whether operation was called for or not rested on a diagnosis of not only the nature of the case but its exact conditions from time to time Many cases undoubtedly recovered without any operation Nevertheless owing to the liability to subsequent trouble in the pelvis he thought that operation should be carried out in the first place

Dr J INGLIS PARSONS (London) thought that no definite statement could be made on the subject of any value unless details of 100 cases of those operated on at the time of onset and of those which had been left to recover spontaneously respectively were carefully prepared and tabulated Speaking from his own experience and judging from the unsatisfactory after results of cases which had spontaneously recovered he was decidedly of opinion that operation in all cases should be the routine if there was a doubt

Dr ADDINSELL replied supporting his contention of non operative treatment in suitable cases

A discussion then took place on

The so called Ovarian Pain, its Causes and Treatment

Dr G E HERMAN (London) opened this discussion by a crisp, short, and well-arranged paper. He indicated the seat of so-called ovarian pain as corresponding to a point two inches internal to the anterior superior iliac spine in the area of the distribution of the tenth dorsal nerve to the abdominal wall. Pain at this spot was elicited on deep pressure and it was therefore thought that the pain was due to pressure on the ovary. He did not think that the pain was really ovarian. He divided the subject into three—the pain, its nature and causes, and its treatment. The so-called "ovarian" pain might be one of four kinds. 1. Peritoneal pain—outside the scope of the discussion. 2. Reflected pain from visceral disease. Reflected pain might be caused by disease of the subjacent ovary; if so, what was the disease? This kind of pain might also, however, be the result of disease of the bowel, the liver, the gall-bladder, the kidney, the ureter, or the Fallopian tube. When produced by disease of the ovary it was pain and tenderness of the skin and not of the ovary. Other causes not associated with signs of disease might bring about this pain. Two conditions of the ovary had been said to cause chronic pain: (*a*) sclero-cystic disease; and (*b*) cirrhosis of the ovary. Ovarian cystic disease was usually painless. The second was due to changes in the ovary no more painful than was the same condition in the lung, liver, or kidney. The fibrous after-stage of chronic inflammation of the ovary was not painful. Shrunken ovaries were not painful. There was, therefore, no reason why fibrosis of the ovaries should cause pain. Their knowledge of the pathlogy of ovarian atrophy was not very exact. He knew of no way of distinguishing between the various conditions which really caused the so-called "ovarian" pain. 3. Neurasthenic pain. When the resistance of the higher nervous centres was weakened from any cause, pain might become aggravated and extended or it might be manifested without existing disease. Among the weakening causes were: (*a*) anæmia, (*b*) cachexia, (*c*) fever, and (*d*) menstruation. The neurasthenic cause of pain was the most frequent to come under the notice of the gynæcologist. 4. Hysterical pain. This kind of pain did not confine itself to anatomical boundaries, and other signs of hysteria were usually present. The treatment of so-called chronic ovarian pain rested on the removal of its cause, which was often other than the state of the ovary, or depended on neurasthenia or was a manifestation of hysteria. He quoted many cases to show the futility of operative treatment of so-called ovarian pain and laid stress on the return of the pain soon after removal of the ovaries, igni-puncture, resection, or simple removal of cysts. The neurasthenic condition, he recommended, should be treated by tonics, rest, food and sleep, and cessation from a mode of life and surroundings which were conducive to a return of the neurasthenia, and the hysterical pain by suggestion and moral treatment, which must be kept up or the cases would tend to relapse. Operations often acted suggestively to the hysterical patient and so did only temporary good and therefore were not desirable. The reflected pain called for treatment by attention to the evidences of the existence of substantive disease such as erosions of the cervix, uterine conditions, disease affecting the ovaries, tubal conditions, inflammations, adhesions, and the like. He strongly deprecated opening the abdomen for ovarian pain purely, or the removal of the ovaries for pain without strong evidence that the pain was due to actual disease remediable by abdominal section apart from the neuralgic condition of the ovaries.

Mr. F. B. JESSETT (London) said that in certain cases of pain complained of on the right side of the abdomen in the region of the tenth dorsal nerve distribution it was very difficult to distinguish between that referable to so-called ovarian pain and that due to chronic appendicitis. In the treatment of ovarian pain correct diagnosis of the real cause of pain in the locality was the very essence of the matter. He did not agree that there was no pain in sclero-cystic disease of the ovaries; the pain, indeed, was often acute, and if the ovary was removed the pain would disappear permanently. In many cases of cystic disease incision of the ovary and removal of the cyst were all that was necessary.

Dr. JOHN CAMPBELL (Belfast) thought that varicocele of the broad ligament ought to be considered as a cause of the so-called ovarian pain. Chronic constipation was also a cause of the pain and also tended to produce varix of the veins of the broad ligament, just as in the male constipation assisted to produce varix of the veins of the cord.

Dr. HERBERT SNOW (London) said that for the most part he entirely agreed with Dr. Herman's contentions. Constipation was often a cause of so-called ovarian pain. He did not think that hysteria and neurasthenia ought to be considered separately as a cause of ovarian pain. He also thought that irritable endo-cervicitis was often the cause of ovarian pain.

Mrs. F. N. STANLEY BOYD, M.D. (London), said that it was well known that the variability of pain in pelvic organs was common and would account for much of the diversity of opinion entertained by members of the profession. She thought that varix of the broad ligament was possibly a cause of pain, especially in nurses and those who had to do much standing about, as female shop assistants. When it was said that ovarian pain was not due to fibro-cystic disease peritoneal adhesions must be excluded as undoubtedly they were the cause of much pain in some cases. In spite of what was said against operation for pain there were cases which were much benefited by operation and others by general improvement of health following on change of air and tonics.

Dr. EWEN J. MACLEAN (Cardiff) wanted to know how the differentiation of the various conditions was arrived at, for in his experience the matter was no easy one, as must be freely acknowledged by all present. He did not think that the removal of ovaries for ovarian pain would in the future be so frequently resorted to, if at all. Resection was now more usual than removal of the ovaries. He thought, however, that resection was often as great a failure as removal of the ovaries. In his experience neurasthenic cases were just those in which the ovarian pain was most acute.

Dr. HEYWOOD SMITH (London) also discussed the relative merits of operative and non-operative measures and laid stress upon the regions of the abdominal wall in which the reflected pain was manifested.

Dr. CUTHBERT H. J. LOCKYER (London) said that he had examined undoubtedly painful ovaries which had been removed but found no microscopical or pathological change which could be assigned as the cause of pain and the organs were evidently functionally useful. Visceral pain was more marked on the left than on the right side of the body, perhaps because there was some constitutional weakness on the left. Frequent child-bearing and hyperlactation were a fruitful cause of ovarian pain and he quoted a series of cases to show that the ovarian pain was invariably in the left tenth dorsal nerve area on the abdominal wall. He thought that practical medicinal treatment was the correct line and not the operative method.

Dr. INGLIS PARSONS thought that ovarian pain *quâ* pain had really no practical diagnostic value as regards operative or non-operative treatment. The pain in neurasthenic cases was often rheumatic in nature. The ovary was more often not the cause of the so-called ovarian pain. He was of the opinion that in some cases sclero-cystic disease was the cause of pain and quoted a case which had gone from consultant to consultant where he removed a small hard fibroid ovary and cured the pain complained of.

Dr. A. F. H. RABAGLIATI (Bradford) contributed an interesting and valuable item to the discussion in the form of photographs of the variable seats in the body of pain in certain women the subject of ovarian pain. He also showed a series of plates illustrating the exercises necessary for the alleviation of this condition. He contended that the rheumatic and gouty diathesis was commonly the cause of ovarian pain. The condition was really in the nature of a gouty or rheumatic effusion into the stroma of the ovary, just as it was elsewhere in the body. He did not believe in operative procedures, as the disease was in the connective tissues all over the body. The Weir-Mitchell treatment was most useful in many cases, and also regimen in diet, aimed at the aforementioned causes, would be found most useful.

Dr. W. E. FOTHERGILL (Manchester) said that ovulation and ovarian pain were closely connected, as one or other ovary from month to month was usually the site of pain and the painful condition was usually attended with enlargement.

Dr. J. B. HELLIER (Leeds) advocated examination under an anæsthetic in cases of so-called ovarian pain. The main object to be aimed at was to try to cure the pain without operative measures if possible. Those cases in which the ovaries were removed for pain and in which the ovaries showed no evidence of disease were always disappointing in their after-results in every way.

Professor J. W. BYERS considered that the matter resolved itself into three great questions: 1. Was there a cause in the ovary itself to account for the pain? 2. Was pain apart from disease a reason for opening the abdomen?—No. 3. If everything else failed ought the abdomen to be opened? That depended on circumstances very wide in scope. The best treatment was to improve the patient's morale and general health. He could not agree that varix of the broad ligament was a cause of pain, for in those cases in which the condition was operated on no cure had resulted.

Dr. F. W. **FORBES-ROSS** (London) said that as regards the seat of the so-called ovarian pain in the distribution of the tenth dorsal nerve on the abdominal wall he had observed that in affections of abdominal organs which were entirely covered with peritoneum reflected pain in disease was usually referred to the areas round about the umbilicus; on the other hand, where the organ was not entirely covered by peritoneum and some of its surface was in relation to the areolar tissue of the abdominal parietes the pain was usually referred to the locality of the abdominal wall immediately over the organ affected. If the ovary was regarded as an entirely peritoneal-covered organ then the area of the tenth dorsal nerve was properly the ovarian area and this tended to indicate the part played by peritoneal adhesions and sclerosis of the capsule of the ovary in causing pain reflected to the tenth dorsal segment. Often, however, the so-called chronic ovarian painful area was merged into the distribution of the eleventh dorsal nerve on the anterior surface of the abdomen, immediately above Poupart's ligament and around the opening of the external abdominal ring. This was well illustrated in such affections as pelvic cellulitis and conditions referable to the cervix and body of the uterus, for in these affections the area of the eleventh dorsal nerve was always the seat of pain. Attention to this would serve for correct estimation as to the origin of pain which was often not fundamentally ovarian. This was also often combined with pain in the tenth dorsal area and was often sympathetic in the ovarian region with a cause existing in the cervix and uterus. Dr. Herman had mentioned the need of attending to cervical erosions and Dr. Herbert Snow had remarked on endocervicitis as a cause of ovarian pain. He would add to the above the overdistended Nabothian cystic follicle, so frequently present and so often lightly regarded and neglected by the practitioner. Experience had taught him that in many cases without erosion of the cervix but with the existence of one or two Nabothian cysts either in the canal or eccentrically placed on the vaginal surface of the cervix chronic pain in the tenth and eleventh dorsal segment often existed and that on puncture of the cyst with a scalpel, which was painless and did not require an anæsthetic, the pain was removed, along with the frequent [illegible] was glad to hear [illegible] matic and gouty [illegible] lusions. In this connexion he would point out the great efficacy of iodide of potassium in 15-grain doses, repeated twice or thrice. He could not agree that varicocele of the broad ligament was the cause of ovarian pain.

Dr. F. **EDGE** (Wolverhampton) thought that there were many cases where operation for ovarian pain did good service.

Sir A. V. **MACAN** (Dublin) said that he disapproved of the term "ovarian pain." Many cases were mental and impressional in nature. Many women returning from America to Ireland went about from specialist to specialist, knew all about their supposed ailments, and often demanded operation. He did not think it was possible to remove ovarian cystic disease by merely incising one cyst, for the whole ovary was microscopically cystic in many cases. He did not believe that removal of the ovaries for pain *per se* was of the slightest use or could be honestly advocated.

Dr. **HERMAN** in his reply stated that he had addressed the section on so-called *chronic* ovarian pain and not on acute painful conditions of the ovaries, which did not enter into the scope of the discussion. The eleventh dorsal nerve area on the abdomen was of course the area corresponding to the cervix, uterus, and Fallopian tubes; the tenth dorsal nerve area was that appertaining to the ovary and its diseases. He did not think that varix of the broad ligament was the cause of pain, and Mr. A. Pearce Gould had shown in his work on Varix that the pain was the reason for drawing attention to a long-existent varicocele, that varix often existed without pain, and that after removal of the varicocele the pain did not at any rate immediately depart, so that it appeared as if other causes were at work than the mere existence of the varix. Cystic ovaries were removed because they were cystic, and ovaries were removed in painful dysmenorrhœa and not because there was pain only.

Dr. **HELLIER** read an interesting account of a case in which an ovarian tumour was simulated by lymphangeioma [illegible] the tumour removed, [illegible] is. [illegible] tive and well-thought-out paper entitled "Some Cases of Ectopic Gestation."

PSYCHOLOGICAL MEDICINE.

THURSDAY, JULY 28TH.

Dr. J. **BEARD** (Edinburgh) read a paper on

Heredity as Viewed from the Biological Aspect.

The phenomena of [illegible] ited to the germ cells of plant [illegible] germinal in nature. In the proc [illegible] to generation of plants and [illegible] redity were limited to the line of germ cells of each individual, the plant or animal body being regarded as a mere lateral and terminal offshoot of this line. In this sense the parent could not transmit anything to his so-called offspring. "The germ cells were the Alpha and Omega: they passed from a beginning of which we have no knowledge, to an end, which we cannot conceive." Whatever modification the parent may have acquired during its life did not concern or affect the germ cell and hence such modification could not be transmitted to the offspring which arose from the germ cell. "Acquired characters" were thus not transmitted. Dr. Beard then referred to the cutting off of the tails of adult mice which had no effect on the offspring. For though generations of mice might thus be treated, yet the young were always born with normal tails. The recapitulation theory of biologists, according to which every animal in the course of its development "climbed its own genealogical tree," was merely an illusion of the imagination without any basis in fact. The formation of the "embryo" as ordinarily understood was a mere incident in a chain of events. The process of sexual conjugation of a germ cell and a sperm cell was the "loose joining together without blending of two individualities." But neither the germ cell nor the sperm cell had itself been a higher animal and neither the one nor the other had ever been a somatic cell of an animal body. The theory of Darwin known as "natural selection" in the struggle for existence was, he contended, a complete fallacy, while Weismann's theory of germinal selection was a purely mental concept "quite without connexion with any known phenomena or epoch of development and hanging entirely in the air." As defined by Weismann this process would furnish a very great variety of gametes or conjugation cells so varied in their characters or qualities that the resemblances rather than the differences among the progeny would require explanation. Dr. Beard then proceeded to discuss the phenomena of fertilisation, and stated that in the line of development of the germ cells from the fertilised egg of one generation to the visible primary egg of the same generation in many invertebrates the intermediate cell generations were five or less, thus demonstrating a close relation of the germ cells. In vertebrates the number of intermediate divisions might be ten or less. As regarded the phenomena of variation the Darwinian theory *did not attempt to explain the* cause of variation but assumed its existence. The only adequate cause of variation yet suggested was Weismann's theory of amphimixis and germinal selection. But these were different from Nature's method which was slow and sure. When Nature caused variation she initiated it by altering the environment. While some one or more varieties of a species might be able to adapt themselves to the new conditions, others would fail in this, and these would be eliminated either as individuals or by germinal elimination. This explanation threw light on the Mendelian cases of intercrossing of peas, on mimicry, protective colouration, bud-variation, and the loss of organs such as the hind limb of the Greenland whale. Dr. Beard then referred to the positions occupied by Darwin and Weismann as regarded natural selection and germinal selection respectively and concluded that by his own discoveries he had "completely and decisively outflanked and rendered untenable" the positions held by Darwin and Weismann. He also referred to the inappropriateness and crisp, short, and well-arranged paper. He indicated the seat of so-called ovarian pain as corresponding to a point two inches internal to the anterior superior iliac spine in the area of the distribution of the tenth dorsal nerve to the abdominal wall. Pain at this spot was elicited on deep pressure and it was therefore thought that the pain was due to pressure on the ovary. He did not think that the pain was really ovarian. He divided the subject into three—the pain, its nature and causes, and its treatment. The so-called "ovarian" pain might be one of four kinds. 1. Peritoneal pain—outside the scope of the discussion. 2. Reflected pain from visceral disease. Reflected pain might be caused by disease of the subjacent ovary; if so, what was the disease? This kind of pain might also, however, be the result of disease of the bowel, the liver, the gall-bladder, the kidney, the ureter, or the Fallopian tube. When produced by disease of the ovary it was pain and tenderness of the skin and not of the ovary. Other causes not associated with signs of disease might bring about this pain. Two conditions of the ovary had been said to cause chronic pain: (*a*) sclero-cystic disease; and (*b*) cirrhosis of the ovary. Ovarian cystic disease was usually painless. The second was due to changes in the ovary no more painful than was the same condition in the lung, liver, or kidney. The fibrous after-stage of chronic inflammation of the ovary was not painful. Shrunken ovaries were not painful. There was, therefore, no reason why fibrosis of the ovaries should cause pain. Their knowledge of the pathlogy of ovarian atrophy was not very exact. He knew of no way of distinguishing between the various conditions which really caused the so-called "ovarian" pain. 3. Neurasthenic pain. When the resistance of the higher nervous centres was weakened from any cause, pain might become aggravated and extended or it might be manifested without existing disease. Among the weakening causes were: (*a*) anæmia, (*b*) cachexia, (*c*) fever, and (*d*) menstruation. The neurasthenic cause of pain was the most frequent to come under the notice of the gynæcologist. 4. Hysterical pain. This kind of pain did not confine itself to anatomical boundaries, and other signs of hysteria were usually present. The treatment of so-called chronic ovarian pain rested on the removal of its cause, which was often other than the state of the ovary, or depended on neurasthenia or was a manifestation of hysteria. He quoted many cases to show the futility of operative treatment of so-called ovarian pain and laid stress on the return of the pain soon after removal of the ovaries, igni-puncture, resection, or simple removal of cysts. The neurasthenic condition, he recommended, should be treated by tonics, rest, food and sleep, and cessation from a mode of life and surroundings which were conducive to a return of the neurasthenia, and the hysterical pain by suggestion and moral treatment, which must be kept up or the cases would tend to relapse. Operations often acted suggestively to the hysterical patient and so did only temporary good and therefore were not desirable. The reflected pain called for treatment by attention to the evidences of the existence of substantive disease such as erosions of the cervix, uterine conditions, disease affecting the ovaries, tubal conditions, inflammations, adhesions, and the like. He strongly deprecated opening the abdomen for ovarian pain purely, or the removal of the ovaries for pain without strong evidence that the pain was due to actual disease remediable by abdominal section apart from the neuralgic condition of the ovaries.

Mr. F. B. Jessett (London) said that in certain cases of pain complained of on the right side of the abdomen in the region of the tenth dorsal nerve distribution it was very difficult to distinguish between that referable to so-called ovarian pain and that due to chronic appendicitis. In the treatment of ovarian pain correct diagnosis of the real cause of pain in the locality was the very essence of the matter. He did not agree that there was no pain in sclero-cystic disease of the ovaries; the pain, indeed, was often acute, and if the ovary was removed the pain would disappear permanently. In many cases of cystic disease incision of the ovary and removal of the cyst were all that was necessary.

Dr. John Campbell (Belfast) thought that varicocele of the broad ligament ought to be considered as a cause of the so-called ovarian pain. Chronic constipation was also a cause of the pain and also tended to produce varix of the veins of the broad ligament, just as in the male constipation assisted to produce varix of the veins of the cord.

Dr. Herbert Snow (London) said that for the most part he entirely agreed with Dr. Herman's contentions. Constipation was often a cause of so-called ovarian pain. He did not think that hysteria and neurasthenia ought to be considered separately as a cause of ovarian pain. He also thought that irritable endo-cervicitis was often the cause of ovarian pain.

Mrs. F. N. Stanley Boyd, M.D. (London), said that it was well known that the variability of pain in pelvic organs was common and would account for much of the diversity of opinion entertained by members of the profession. She thought that varix of the broad ligament was possibly a cause of pain, especially in nurses and those who had to do much standing about, as female shop assistants. When it was said that ovarian pain was not due to fibro-cystic disease peritoneal adhesions must be excluded as undoubtedly they were the cause of much pain in some cases. In spite of what was said against operation for pain there were cases which were much benefited by operation and others by general improvement of health following on change of air and tonics.

Dr. Ewen J. Maclean (Cardiff) wanted to know how the differentiation of the various conditions was arrived at, for in his experience the matter was no easy one, as must be freely acknowledged by all present. He did not think that the removal of ovaries for ovarian pain would in the future be so frequently resorted to, if at all. Resection was now more usual than removal of the ovaries. He thought, however, that resection was often as great a failure as removal of the ovaries. In his experience neurasthenic cases were just those in which the ovarian pain was most acute.

Dr. Heywood Smith (London) also discussed the relative merits of operative and non-operative measures and laid stress upon the regions of the abdominal wall in which the reflected pain was manifested.

Dr. Cuthbert H. J. Lockyer (London) said that he had examined undoubtedly painful ovaries which had been removed but found no microscopical or pathological change which could be assigned as the cause of pain and the organs were evidently functionally useful. Visceral pain was more marked on the left than on the right side of the body, perhaps because there was some constitutional weakness on the left. Frequent child-bearing and hyperlactation were a fruitful cause of ovarian pain and he quoted a series of cases to show that the ovarian pain was invariably in the left tenth dorsal nerve area on the abdominal wall. He thought that practical medicinal treatment was the correct line and not the operative method.

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Dr. A. F. H. Rabagliati (Bradford) contributed an interesting and valuable item to the discussion in the form of photographs of the variable seats in the body of pain in certain women the subject of ovarian pain. He also showed a series of plates illustrating the exercises necessary for the alleviation of this condition. He contended that the rheumatic and gouty diathesis was commonly the cause of ovarian pain. The condition was really in the nature of a gouty or rheumatic effusion into the stroma of the ovary, just as it was elsewhere in the body. He did not believe in operative procedures, as the disease was in the connective tissues all over the body. The Weir-Mitchell treatment was most useful in many cases, and also regimen in diet, aimed at the aforementioned causes, would be found most useful.

Dr. W. E. Fothergill (Manchester) said that ovulation and ovarian pain were closely connected, as one or other ovary from month to month was usually the site of pain and the painful condition was usually attended with enlargement.

Dr. J. B. Hellier (Leeds) advocated examination under an anæsthetic in cases of so-called ovarian pain. The main object to be aimed at was to try to cure the pain without operative measures if possible. Those cases in which the ovaries were removed for pain and in which the ovaries showed no evidence of disease were always disappointing in their after-results in every way.

Professor J. W. Byers considered that the matter resolved environment. The public followed with keen interest their remarks in this section, and especially on heredity. To be delivered from the "dead hand" of heredity, to find a door of deliverance, was an object of eager longing to many. What was inherited was not a special alcoholic craving or a disease of distinctive type, but a morbid tendency of the brain, a fault which might by early and careful training and surroundings be overcome. A tendency to disease, such as gout, successfully resisted through three generations was stamped out in the fourth—that is to say, the fourth generation was born absolutely without any weakness or tendency to uricacidæmia and gout. In nurture and environment they had agencies of great potency which, if rightly employed, had considerable power to neutralise or thwart the evil influences and the fatalism of heredity.

Dr. C. R. **DRYSDALE** (London) stated that environment made up 99 per cent. of all the question of improvement of the race. Heredity was far too difficult a matter to be dealt with practically and he disagreed with the view recently advocated by Dr. Rentoul, Dr. Chapple of New Zealand, and others, that we should sterilise the epileptic, the insane, the inebriates, and confirmed paupers by some surgical operation. There was no question of the prevalence of physical degeneracy in this country when 77 per cent. of the population lived in cities and when out of 11,000 young men in Manchester who wanted to serve their country as soldiers only 2000 could satisfy the low standard of five feet three inches in height. He felt that the only way to improve the race physically was by improving the social and hygienic condition of the people.

[illegible]at the truth lay [illegible] Professor Karl [illegible] qualities are inherited as strongly as are stature and anatomical characters and the view of Dr. Beard that there was no hereditary transmission at all from parent to offspring. With a large personal experience of insanity he believed that heredity played a great part in disease and human degeneration, and this had been confirmed by the very able presentation of statistical data in Dr. König's paper. Dr. Jones related his experience in the study of slum and country children and said that there was more in heredity than could be established by the morphology and continuity of germ cells alone—which was Dr. Beard's ultimate criterion. He considered that bio-chemical and constitutional changes, which certainly existed but the presence of which was not revealed by the microscope, opened up fresh fields for investigation and research.

Mr. **JAMES STEWART** (Clifton) said that of the large number of cases of alcoholism and inebriety which he had under care during the last 20 years quite 50 per cent. were the issue of neurotic parentage. The parents themselves were not necessarily given to drink but exhibited some nervous defect or degeneracy. Similarly he had found inebriate parents whose children were particularly liable to [illegible]s one of the most [illegible]nd nurture were of [illegible] of life. Place, for [illegible] parent in favourable [illegible] he would [illegible]ay escape the risk of [illegible]elf an alcoholic.

[illegible]YMOUR **TUKE** (London) inquired whether any [illegible]own of a general paralytic begetting a son who [illegible]f life would develop general paralysis without personal predisposing cause.

Dr. G. F. **BLANDFORD** (London) said that the environment was a powerful agent [illegible] of insanity. If they could [illegible] patients and have them [illegible] far fewer would become insane than if they were permitted to live with their parents.

Dr. **DAVID YELLOWLEES** (Glasgow) believed that the subject of heredity was really most difficult to understand. If the germ cell in its development pursued a course *altogether fatalistic, one regardless of all* influence proceeding from the environment in which it developed, then moral [illegible]ponsibility was reduced almost to a myth and conscience [illegible] delusion. The transmission of parental qualities in [illegible]ct of bodily and mental traits could not for a moment [illegible]ubted by any physician of experience.

[illegible] F. **MAY DICKINSON BERRY** (London) inquired whether [illegible]as any difference in the liability to insanity of [illegible]rn after the father had become insane compared [illegible]en born prior to his insanity and also whether the [illegible] a tuberculous father begotten by him before and after tuberculous infection were differently constituted as regards health of body and mind.

The **PRESIDENT** (Dr. C. A. **MERCIER**, London) remarked upon the importance and intricacy of the phenomena of heredity and briefly referred to the necessity of correct views in the matter in regard to the improvement of the race.

Dr. **BEARD** and Dr. **KÖNIG** then briefly replied to the questions asked in the course of the above discussion.

PHYSIOLOGY.

THURSDAY, JULY 28TH.

Professor E. W. **WACE CARLIER** (Birmingham) read a paper on

Histological Changes in Liver Cells during Activity.

[illegible]le rats were after a period of [illegible] diet divided into four batches [illegible]or several days on four different diets—(1) mixed, (2) proteid, (3) carbohyrate, and (4) fat. After 24 hours' starvation one animal in each batch was killed and the remainder were given a full meal of the special kind to which they had been accustomed, one from each batch being then killed off hour by hour and the livers appropriately preserved for microscopic examination. In the fasting rats were minute highly refractive granules of a greenish-grey colour which had disappeared an hour after the meal and did not reappear even in 12 hours. In all were clumps of a structureless material, not [illegible] eosin and iron-alum- [illegible] however, after a long [illegible] the same whatever the diet, but least marked on a carbohydrate one. Two distinct periods of nuclear activity were recognisable after a meal, the first commencing directly and lasting until the third hour, and the second beginning four or five hours after the meal and of longer duration. During these periods the nuclei became less plump and showed changes similar to those previously described by Professor Carlier in the oxyntic cells of the newt's stomach. These changes he regarded as pointing to the formation of an enzyme. A remarkable feature was the rapid vacuolation of the cytoplasm noted one hour after the meal, disappearing one or two hours later. About the sixth hour the cells swelled up and glycogen accumulated in abundance.

Dr. K. A. **GROSSMANN** (Liverpool) read a paper on

Further Investigations on Accommodation.

Analysis of a case of astigmatism with excentricity of the pupil where the axis changed during accommodation showed that this changing of the axis was due to a lateral displacement of the entire lens during accommodation, as demonstrated by Dr. Grossmann last year in a case of aniridia. This excentricity and ovality of the pupil had led him to investigate the accommodation changes in eyes with slit-shaped pupils. The eyes of cats under the influence of eserine and atropine were frozen by solid carbon dioxide and the shape of the lens was observed in section. Under the influence of eserine the lens showed a very marked posterior lenticonus with its apex above the optical axis. Thereby a [illegible] astigmatis[illegible] the slit-shaped [illegible] astigmatism and so neutralised it. Here for the first time was given an explanation of the shape of the pupil in the cat. Dr. [illegible] to show this vertical astigm[illegible] on cats and *examining the* [illegible] had been able to disprove the assertion of Hess that the range of accommodation in the cat was practically *nil;* it was, on the contrary, considerable. Finally, he argued that the iris was more important as an optical (stenopæic) diaphragm than as a light screen. A large number of slides illustrated this paper.

Dr. **GROSSMANN** read a second paper on

The Purkinje-Sanson Reflex Image of the Anterior Lens Surface.

In observing Purkinje-Sanson reflections from the anterior surface of the lens an angle of incidence of 60° was better than one of 30° as used by Helmholtz. It was easy by this means to obtain reflex images from the circumpolar and peripheral parts of the anterior lens surface but it was in the overwhelming majority of cases impossible to get any reflection from the centre. The centre of the lens was, in fact, not spherical either in young or old, atropinised or normal eyes. By careful observation the reflex image was seen to be interrupted by black lines which formed the figure of a six- or seven-rayed star corresponding to the architecture of the lens. The reflection took place, therefore, at some surface lying deeper than the lens capsule, since the latter did not take part in the radiate arrangement of the lens fibres. Observations on a case of polar cataract showed that the reflecting surface dipped inwards towards the centre of the lens at the margin of the small cataractous opacity, although the anterior surface of the lens capsule was of quite normal shape.

Professor J. A. **MacWilliam** (Aberdeen) read a paper on

Some Points in the Physiology of the Mammalian Heart.

The spontaneous rhythmic beat of the heart might be observed to originate not only in the terminal parts of the vena cava but also in the coronary veins. Vagus excitation even when strong did not diminish the direct excitability of the ventricle; its effects were purely upon the force of the contraction. Contrary to general belief the rhythm of the heart, the connexion of which with the central nervous system had been severed, was remarkably insensitive to changes of blood pressure within wide limits, although the contractile force was very readily affected. There was no trustworthy experimental evidence that the cardiac augmentor nerves could be excited reflexly or by cerebral anæmia or asphyxia. The peripheral efficacy of the vagus was not markedly affected by asphyxial blood or within wide limits by changes of arterial and venous pressure. After asphxyia had reached a certain stage readmission of air into the lungs was followed by an excessively rapid heart-beat.

Dr. **Hugh Maclean** (Aberarder) communicated a paper on

The Action of Muscarin and Pilocarpin upon the Heart.

The paper, which was read by Professor **MacWilliam**, showed that in the heart of the frog, the newt, and the eel the "survival time" and the efficacy of the inhibitory mechanism underwent marked seasonal variations. Muscarin and pilocarpin were more or less effective in exact correspondence with the varying efficacy of the inhibitory mechanism as tested by direct electrical excitation. This parallelism was equally marked in different isolated portions of the heart and showed that the two drugs investigated acted on the inhibitory mechanism and not directly on the cardiac muscle. Since the apical portion of the newt's heart could be inhibited by muscarin and pilocarpin and the inhibition was done away with by atropin, and yet this part was free from ganglion cells, these drugs must act upon the terminal portion of the inhibitory mechanism.

Professor **Carlier** read a paper on

The Elastic Tissue of the Eyeball.

More elastic tissue was found in the eyes of birds than of any other class of vertebrates and especially in birds that accommodated strongly to pick up small objects. The eyes of other members of the sauropsida, such as lizards, did not possess elastic tissue at all. The so-called elastic fibres which Tartufieri and others had described in the cornea and in Descemet's membrane did not stain with Weigert's stain unless this was reinforced by orcein, and they were not composed of elastin but of a chemically allied substance.

A joint meeting of the Section of Anatomy and Physiology was held under the chairmanship of Professor **Arthur Thomson** (Dublin) and later of Professor F. **Gotch** (Oxford) to discuss

The Thalamic Region.

The subject was introduced by Dr. **Gustav Mann** whose remarks are reported under the proceedings of the Section of Anatomy. Among the points of special physiological interest may be noted Dr. Mann's observation that removal of the olfactory lobe in young rabbits was invariably fatal, owing to loss of the sense of smell. Dr. Mann divided the thalamus into a dorsal and a ventral portion, the fillet fibres terminating in the anterior part of the latter. The dorsal portion, with the exception of the tænia thalami, ganglion habenulæ, and fasciculus retroflexus, served to connect the thalamus with the cerebrum. The effects of removal of the cerebrum, middle ear, and eyes were explained with the help of 60 diagrams representing the nuclei of the thalamus of the rabbit.

Dr. W. **Page May** (London) described the effects of one-sided lesions of the thalamus performed for him by Sir Victor Horsley. The most notable symptoms were paralysis and anæsthesia of the opposite side of the body, hæmianopia, and turning of the face to the side of lesion with the opposite ear depressed to the opposite shoulder. In some cases the opposite pupil became larger than that of the same side.

FRIDAY, JULY 29TH.

Sir **Victor Horsley** in introducing the discussion on

Chloroform Anæsthesia

pointed out that the appointment of the special chloroform committee of the British Medical Association was the result of Dr. Waller's suggestion that death during chloroform anæsthesia was due to overdose. The committee was instructed to determine quantitatively the percentage of chloroform in the air breathed and in the blood. In its labours it had been so fortunate as to secure the help of Mr. Vernon Harcourt who had devised a simple apparatus by which it was possible to regulate the percentage of chloroform vapour in the air breathed. This apparatus was, in the opinion of the committee, by far the most suitable yet devised and if shaking was avoided it delivered air containing at most 2 per cent. by volume of chloroform vapour. Error due to changes of temperature in the chloroform was avoided by the introduction of coloured beads of different specific gravity which served as indicators of such change. It was as necessary to know the dose of chloroform given as of any other drug, and Harcourt's apparatus enabled them to do so. In children a percentage of 1·5 was often sufficient to induce anæsthesia. After some 20 minutes the percentage required to keep up the anæsthesia fell enormously and might sink to nothing during as long as 20 minutes. Du Bois's apparatus weighed a quarter of a hundredweight and had the disadvantages inseparable from any type of "blow-through" apparatus.

Professor B. **Moore** (Liverpool) described experiments conducted in association with Dr. H. E. Roaf showing that chloroform formed easily dissociable compounds or aggregates with the proteids of the blood and tissues and argued that the production of anæsthesia was due to this fact. The aggregations only existed so long as an adequate pressure or concentration of the anæsthetic was kept up in the surrounding medium. Their existence was shown (1) by the greater solubility of chloroform in serum or solutions of hæmoglobin than in salt solution—e.g., serum dissolved five times as much as water or normal saline solution; and (2) by the fact that at equal concentrations the pressure of the anæsthetic (measured by the differential densimeter, an instrument specially designed for this purpose) was much lower in serum or blood than in water or saline solution. With increasing concentration of chloroform in the air breathed the amount of chloroform in the blood was found to increase at a proportionately greater rate. From experiments upon cardiac tissue and cerebral tissue he had come to the conclusion that chloroform produced its effects by acting upon protoplasm and not upon such substances as lecithin or fat and that these effects were proportional to the concentration or osmotic pressure of the anæsthetic at any given time.

Mr. E. S. **Edie** had, in conjunction with Professor Moore, investigated the precipitates produced by chloroform in solutions of hæmoglobin and serum. One and a half per cent. of chloroform produced a precipitate in the former when kept at blood temperatures. With higher percentages the solution first became brick red and then opaque. The precipitate could be washed with water and was practically insoluble in it. When exposed to a low pressure this washed precipitate gave off considerable quantities of gas, presumably chloroform. It was readily soluble in sodium hydrate and sodium carbonate solutions. When the percentage of chloroform was insufficient to cause a precipitate in hæmoglobin solutions the compound was salted out by saturation with ammonium sulphate. Determination of the chlorine in the salted out and precipitated compounds showed that this was approximately constant. With carbon-monoxide hæmoglobin much more chloroform was necessary to cause precipitation.

Professor C. S. **Sherrington** (Liverpool) stated that his experiments on the effects of perfusing blood-containing chloroform through the isolated mammalian heart showed that with heavy doses a permanent damage was inflicted which could not be removed by any amount of perfusion with saline solutions free from chloroform. With lighter doses the cardiac beat was depressed and the amount of the depression was graded by the tension of the chloroform in the liquid [illegible] perfusing [illegible] when the [illegible], for equal [illegible] chloroform in blood. The animal principally used was the cat. He had never observed changes in the rhythm of the isolated heart as the result of chloroform.

Professor S. H. C. **Martin** (London) called attention to Embley's experiment in which chloroform-air mixture in known percentages was supplied through the lungs to an isolated heart and lungs. With 0·8 per cent. of chloroform vapour the heart became motionless in 16 minutes, with 1·2 per cent. in nine minutes. In an intact animal it would take five or six hours to produce the same effect, a fact which the speaker attributed to the increased quantity of blood and tissues absorbing the chloroform and keeping its tension low.

Professor **MacWilliam** stated that in relatively slow poisoning by chloroform when a considerable amount had been given there was depression of the respiratory centre, arterial tone, and of the heart, but the state of the heart was the most serious bar to recovery. In sudden death at comparatively early stages of anæsthesia vagus inhibition might, he pointed out, be largely responsible, the blood flowing slowly through the lungs becoming over-charged with chloroform and producing fatal damage when distributed through the coronary arteries to the heart. It was very important to aim at obtaining steady intake and distribution of the anæsthetic. Given a definite percentage in the air the amount reaching the heart per unit of time might vary (1) from variations in the amount of air breathed, and (2) from variations in the blood current through the lungs; and these variations were especially apt to occur during imperfect anæsthesia. It was often impossible to determine post mortem whether death had occurred from asphyxia or from syncope, since post-mortem rigor in the heart might cause a heart paralysed by chloroform to show the features commonly associated with death from asphyxia.

Dr. **Dudley W. Buxton** (London) stated that although it was once taught that dangers due to reflex cardiac inhibition could be abrogated by giving a larger percentage of chloroform vapour in the air [illegible] that reflex inhibition mi[illegible] were used. The suppos[illegible] due to the fact that complete anæsthesia had not been attained before operative measures had been commenced. In his experience 2 per cent. of chloroform was adequate in most if not in all cases and when a higher percentage than this was used it should only be with special reasons and with a full recognition of the danger of the proceeding.

Professor **Waller** criticised the apparatus devised by Vernon Harcourt on the ground that it established a vicious circle in which, as had been admitted, a rising percentage of chloroform vapour accompanied falling respiration and also that perfect tranquillity of the chloroform surface, although an absolute necessity, had not been secured. The clinical report on the utility of the apparatus had not been either complete or impartial. He thought that the method used by the Chloroform Committee of the British Medical Association for estimating the chloroform of blood was, however ingenious, very laborious and necessarily inexact.

Dr. W. J. **McCardie** (Birmingham) had, using Harcourt's apparatus, anæsthetised ten adults with 1 per cent. of chloroform vapour in the air and had found the average period before the lid reflex was much dulled or abolished to be 16½ minutes; with 1·5 per cent. in ten cases it was 12½ minutes. He had found that, beginning with ethyl chloride followed by ether for five minutes, he could maintain anæsthesia with just about 1 per cent. of chloroform and thought this a very advantageous method. He recommended that induction of anæsthesia should be begun with 1 per cent. to 1½ per cent. of chloroform, but for alcoholic patients the Harcourt apparatus should be modified so that larger percentages could be given. The great principles of graduation of dosage [illegible] on and regulation of dosage [illegible] hesia could be perfectly carried [illegible] and the danger of overdosage [illegible]. The main features of the anæs[illegible] were: (1) the quiet and regular induction with absence of mental and muscular excitement; (2) the comparative lightness and yet efficiency of the anæsthesia; (3) the perfect control; and (4) the quick recovery and small after-effect.

Dr. **Paul M. Chapman** (Hereford) exhibited and described Du Bois's apparatus for administering chloroform. This apparatus furnished a constant flow of air containing chloroform vapour in known percentages independently of any suction efforts on the part of the patient. It was easy to obtain within minute limits faithful percentages of 1·2, 1·6, or 2·0, the latter being just sufficient to produce complete surgical anæsthesia without reflex movements. The apparatus was worked by turning a handle about six times a minute, each revolution delivering four litres of the chloroform-air mixture. It was impossible to exceed 2 per cent. of chloroform unless the apparatus was shaken. The average time occupied in producing complete anæsthesia was eight minutes and he had found administration of chloroform by this instrument most trustworthy and relatively free from danger.

Dr. H. O. **Crouch** (London) had avoided fallacies due to shaking of the Harcourt apparatus and had found that on the average it took 20 minutes to induce anæsthesia. When, however, the breathing was shallow the patient went under quickly and there was grave danger of an overdose. He held strongly that the apparatus was ineffective and depended largely on the accidental element of shaking.

Dr. A. G. **Levy** (London) stated that he had estimated by Harcourt's combustion method the percentage of chloroform vapour in air sucked through a Harcourt's inhaler in the same quantities as those occurring clinically. With varying rates of air-flow he found, with the index at 2 per cent., amounts varying from 2·02 to 1·38 per cent. Even a slight shake raised the percentage to 2·73, while a stronger one raised it to 5. Having illustrated practically that it was possible to shake the bottle Dr. Levy stated that Harcourt's apparatus did not fulfil the essential requirements of a chloroform inhaler—viz., "that it should tell us to a nicety what strength of vapour the patient was breathing."

Sir **Victor Horsley** replied to the various criticisms to which Harcourt's inhaler had been subjected.

ANATOMY.

Thursday, July 28th.

Dr. R. J. A. **Berry** (Edinburgh) and Dr. H. D. **Shepherd** (Edinburgh) gave a demonstration on

Cranio-cerebral Topography,

illustrated by lantern slides and five casts. They had recently been engaged in an investigation of the methods associated with the names of Hare and Thane, Chiene and Reid. In each instance the brain had been thoroughly hardened by means of formol injections on the undissected subject and the guiding lines employed by each of the three methods under investigation were then drawn on the skull, all intermediate portions of the bones being afterwards removed by Hey's saw. The result was a clear demonstration of the positions of the various fissures and convolutions of the brain and their relations to the osseous bars which indicate the guiding lines of the method employed. The conclusions which had been arrived at were that Hare and Thane's method gave the fissures of Rolando and Sylvius fairly accurately, whereas Chiene's method only marked out the Rolandic area correctly in 43 per cent., and, moreover, that Reid's method was altogether inaccurate for marking out the fissure of Sylvius. Hare and Thane's method was therefore to be regarded as the most accurate of all those methods which they had submitted to investigation and the most generally applicable of all methods of cranio-cerebral topography.

Professor **Johnson Symington** (Belfast) inquired whether the material which had been worked with was perfectly fresh or whether there were any shrinking and accumulation of fluid due to old age.

Professor A. **Thomson** (Oxford) and Professor G. D. **Thane** (London) also spoke and, in reply, Dr. **Berry** stated that the greatest care had been taken, and though the method was excessively laborious it gave the utmost precision obtainable and constituted a severe proof of the accuracy or otherwise of the particular method investigated.

Mr. J. W. **Jenkinson** (Oxford) followed and demonstrated by means of the lantern and the microscope

The Arrangement of the Maternal and Fœtal Glycogenic Cells in the Placenta of the Mouse.

He stated that glycogen was found first of all in the maternal cells which overlay the allantoidean portion of the trophoblast and that these cells reached their highest phase of development in about 12 days or at the time when the allantoic villi began to penetrate the trophoblast. They were rounded and separated from one another by elongated, fusiform, or stellate supporting cells and each contained a rounded nucleus with one nucleolus. At this time mitoses were no longer to be found in the cells. In the next stage the uterus had by the growth of the embryo increased considerably in size, but the cells of the maternal glycogenic tissue had ceased to multiply, were incapable of keeping pace with this increase of volume, and were necessarily separated from one another. They then began to disintegrate and eventually degenerated and disappeared. Meanwhile another glycogenic tissue of trophoblastic—i.e., fœtal—origin had begun to make its appearance. The trophoblast of the placenta was divisible into two portions: (*a*) an allantoic portion on the fœtal side penetrated by the capillaries of the allantois, and (*b*) a glycogenic portion between the allantoic trophoblast on the one side and the maternal glycogenic layer on the other, traversed by maternal blood but not invaded by the fœtal vessels. The cells of this layer secreted glycogen; they were closely packed, oblong in shape, and their nuclei were oval and contained more than one nucleolus. In the subsequent stages of placentation the glycogenic trophoblast encroached more and more on to, and occupied the space previously filled by, the maternal glycogenic cells, ultimately reaching the muscularis. Soon the maternal glycogenic cells showed diminution in numbers and eventually completely disappeared. Towards the end of gestation the glycogen disappeared from the glycogenic trophoblast also, the cells of which collapsed. Mr. Jenkinson thought that this might possibly play some part in determining the moment of parturition as it was across the zone of trophoblastic glycogen cells that the placenta broke away from the uterus.

Professor A. H. YOUNG (Manchester) and Professor ARTHUR ROBINSON (London) communicated some observations on

The Development and Morphology of the Tail.

So far as its functions were concerned the tail of vertebrated animals was admittedly an appendix, but, on the other hand, so far as its development and its general structure were concerned, it had been regarded as morphologically identical with the body itself. If, moreover, the structural elements of the body and the tail were morphologically equivalent the tail, like the body, must be segmental, the segments of the two parts should be of similar value, and their constituent elements should play relatively similar parts in the general economy. The constitution of a typical segment was then described and this was contrasted with a tail segment, and it was shown that the tail of any adult tailed mammal possessed many of the factors that were to be regarded as characteristic of a typical segment, but not the whole of them, for some essential parts were suppressed. For example, the visceral tube was absent and the spinal cord was limited in extent. The ontogeny of the tail helped to confirm and to emphasise the adult anatomy, for it demonstrated clearly that the tail possessed some and was devoid of other important constituent parts of somatic structure. At all periods it was devoid of excretory system and cœlomic space. It possessed blood-vessels and so far as the artery was concerned it simulated, but it was not simply a continuation of, the dorsal aorta of the body somites. Its spinal and sympathetic ganglia were few and it was doubtful if they belonged in reality to the tail somites proper or were merely displaced ganglia from the somatic region. The nerves were derived from the "caudal ganglia," from the posterior somatic ganglia, and the somatic neuromeres of the spinal cord. The muscles were derived from muscle plates which greatly exceeded in number the caudal ganglia and the ventral roots which came from the caudal segments of the spinal cord. The fact that the muscle plates considerably exceeded in number the caudal ganglia and the ventral roots was one of the most striking features of the anatomy of the tail, for it proved that the rule of the muscle deriving its nerve-supply from the same segment was no longer applicable to every part of the body, for in the tail it was certain that many of the muscles were supplied by nerves of more anteriorly placed segments. Amongst the conclusions at which Professor Young and Professor Robinson had arrived as a result of their investigations were that the tail was not merely a backward prolongation of the body, consisting of the same dorsal and ventral parts, but that it was the result of the energy of a growing point which contributed to the formation of the body as well as the formation of the tail. In its widest sense the tail was an appendage to the body and its nervous and vascular supply were dependent on the nerves and vessels of the body which had been prolonged into it.

The rest of the morning was occupied by an important discussion which took place, jointly with the Physiological Section, on

The Thalamic Region.

Dr. GUSTAV MANN (Oxford), who opened the discussion, first drew attention to a fundamental division of the nervous system into two parts, a part in front of and a part behind the posterior commissure of the brain. The part anterior to the commissure he called the thalamus and the part behind, which included the medulla, the pons, and the mesencephalon, he called the cord. At first the two parts were functionally as well as anatomically distinct, for the cord had from the commencement a sensory and motor mechanism, whereas the thalamus was primarily sensory and later the motor mechanism became superadded by means of the cortex and the corpus striatum. The thalamus through the olfactory and optic outgrowths became connected with the olfactory and visual cells and through the red nucleus it became connected with the cord. Dr. Mann regarded the retina, with the exception of the layer of rods and cones, as part of the thalamus and described how the thalamus became further joined to the cord through the sense of touch by means of the fillet. After having thus detailed the various stages in the development of the thalamus he showed an extensive series of drawings of the various thalamic nuclei and agreed with the primary division of the thalamus into dorsal and ventral parts by the falciform nucleus of Ramon y Cajal. The oldest nucleus of the thalamus was the ganglion habenulæ, a nucleus developed in the tænia thalami and persisting after removal of the cerebrum.

Sir VICTOR HORSLEY (London) followed and agreed with the morphological conclusions of Dr. Mann and particularly as to the division of the thalamus into dorsal and ventral portions, according to the original view of Burdach, and he also agreed that the ventral division of the external geniculate nucleus had different pallial relations from the dorsal division. Further, he discussed the minute structure of the ventral division of the thalamus and showed that the extremely restricted termination of the fillet axones as localised by the degeneration method was now confirmed in the most recent publication by Ramon y Cajal. Both methods tended to show that the "fillet nucleus" consisted of three parts, a central globular portion to the opposite sides of which two semilunar nuclei were applied. Further, he asked—What was the morphological unit wherewith to divide the thalamus? He thought that the plexuses of fibres should not be dwelt upon for subdivision of the thalamus but that the true morphological limit was the cell. What neurologists wanted for the analysis of function was the most minute description of the nuclear collections of cells.

Professor F. GOTCH (Oxford) thought that the most important side of the thalamus was afferent and that the efferent was superadded.

Dr. W. B. WARRINGTON (Liverpool) drew attention to Probst's works on the subject of the thalamus. For himself he regarded the thalamus as a great relay centre, receiving the terminations of nerve fibres from the pallium, cerebellum, &c.

Dr. W. PAGE MAY (London), who had been working at the subject in monkeys, gave a most interesting account of the results of lesions in the thalamus and detailed the symptoms produced. He had found in a large number of cases hemi-anæsthesia and hemianopsia of the opposite side of the body, as was found in the classical case in man described by Dr. Hughlings Jackson in 1874. In addition he found in about half the cases a most interesting symptom which consisted in a deviation of the face and head to the same side as the lesion whilst the opposite ear was drawn down to the shoulder. In 15 out of the 16 monkeys on which he had experimented he found paralysis on the opposite side due to implication of the fibres of the pyramidal tract. In 11 there was anæsthesia on the opposite side; in several cases the contralateral pupil was larger than the pupil on the same side as the lesion, and nystagmus was occasionally present.

Sir VICTOR HORSLEY and Dr. MANN replied briefly.

FRIDAY, JULY 29TH.

The meeting of the section on Friday was held in conjunction with the Anatomical Society of Great Britain and Ireland. Professor JOHNSON SYMINGTON (Belfast) was in the chair and a large number of members and visitors were present.

Professor EDWARD FAWCETT (Bristol) read a preliminary communication on

The Ossification of the Lower Jaw in Man.

He first discussed the ossification of that part of the mandible from the region of the mental foramen to the middle line. As was well known Meckel's cartilage itself was directly converted into bone in this situation, but what he desired to emphasise was that Meckel's cartilage was not the only factor in the formation of the "symphysial" portion of the lower jaw but that it was covered in this position by a membranous structure which also became converted into bone and that this ossification was continuous with the so-called dentary centre. Towards the end of the second month a cartilaginous mass appeared in the condyle and extending down through the neck and root of the coronoid process reached the level of the lower end of the anterior border of that process. He doubted if any separate "splenial" centre was ever developed and also if any "angular" mass of cartilage appeared and became secondarily ossified. The appearances of the specimens which he had examined suggested that probably the whole membranous part of the jaw developed from one centre, but his specimens were not young enough to enable him to speak definitely on this point.

Dr. A. KEITH (London) asked whether the cartilage of the condyle and coronoid processes were formed independently of Meckel's cartilage, and Professor ROBINSON whether the Meckelian centre was independent of that in the surrounding membrane or not.

Dr. A. LOW (Aberdeen) confirmed Professor Fawcett's observation that the "dentary" centre appeared in membrane and extended forwards as a plate of bone right up to the middle line in front. From the dentary plate a shelf grew upwards and inwards for the support of the tooth germs, while Meckel's cartilage lay below the plate. Dr. Low, however, had observed that distinct cartilaginous masses appeared in the condyle, the coronoid process, and the angle, and these in turn underwent ossification. In certain mammals these cartilaginous nuclei were much more definite than in man and clearly had no connexion whatever with Meckel's cartilage.

Professor FAWCETT said, in reply, that the cartilage of the condyle and coronoid processes were developed long after the Meckelian cartilage and that the centre of ossification which appeared in the latter in the neighbourhood of the symphysis was independent of that in the surrounding membrane.

Dr. H. W. MARETT TIMS (London) gave a demonstration on

The Significance of Certain Epithelial Masses in Connexion with Developing Teeth,

illustrated with lantern slides. He pointed out that when the jaws of fœtal mammals of various stages were examined certain spherical epithelial masses, lying to the labial side of developing teeth and connected with the neck of the enamel organ, could be observed. Such spherical masses had already been seen in connexion with the fourth premolar of the dog and gymnura and with the so-called molars of the guinea-pig. They were also to be seen to the labial side of the first incisor, the second incisor, and the canine teeth in the human fœtus of three months. In these examples the masses were composed of distinct epithelial cells forming a spherical mass, with a neck, at first widely open and directly continuous with the cells of the dental groove. In a four and a half months' fœtus these bodies were still to be seen lying close to the edge of the jaw, but the cells had become more elongated, concentrically arranged, and distinctly granular. From the constancy of their position in relation to a developing tooth, from their temporary existence, and from their spherical shape they had, Dr. Marett Tims thought, some morphological significance. The only suggestion which occurred to him was that they represented vestiges of a previous dentition. If this were so then the human fœtus showed better marked vestiges of a pre-milk dentition than any other animal with which he was acquainted.

Professor D. J. CUNNINGHAM (Edinburgh) gave a lantern demonstration on

The Varying Form of the Stomach in Man and Anthropoids.

The first part of the paper confirmed and to some extent supplemented the observations of Professor His as detailed in his paper published last year in the *Archiv für Anatomie.* The second part of the paper dealt with certain physiological conditions of the stomach which were now frequently seen in formalin-hardened subjects. The condition especially dealt with was one in which the stomach presented a capacious cardiac part and a long, narrow, tube-like pyloric part. Professor Cunningham showed that this was not a gastric state which could be explained by tight lacing as was inferred by Professor His. He exhibited slides in which it was evident in two males, a female, and also in the stomach of a full time fœtus, and he referred to Mr. Cannon's observations on the movements of the stomach of the cat as observed by means of the x rays. In the third part of the paper the question of hour-glass stomach was discussed and Professor Cunningham supported the views of Mr. B. G. A. Moynihan. He held that this form of stomach might be due to physiological and to pathological causes, but it had yet to be shown that it ever was a congenital condition. The slide of a stomach of a full-time fœtus divided by a physiological constriction into a cardiac expanded part and a tube-like pyloric part was shown.

Dr. A. KEITH (London) drew attention to the fact that formalin seemed to pick out certain parts of the viscera which during life were in a systolic condition, so that by this means a somewhat similar condition was reproduced after death. In this way he explained certain constrictions which were to be seen along the alimentary canal in formalin-hardened bodies.

Dr. W. WRIGHT (Birmingham) thought that formalin did not afford a satisfactory explanation of constrictions. He had seen them during life and in two cases after death.

Professor A. ROBINSON (London) argued that the constrictions were irregularly arranged and not definite in position. They also varied in different individuals.

Professor J. SYMINGTON (Belfast) believed that with formalin the constrictions were more fixed than formerly when chromic salts were used. He supported Professor Dixon on the rarity of the empty diastolic condition.

In reply, Professor CUNNINGHAM thought that the action of formalin was purely a fixative one.

Professor F. KEIBEL (Freiburg) showed a series of models illustrating

The Development of the Uro-genital System, the Liver, the Pancreas, and the Spleen of Echidna.

Some of his more important results were as follows. 1. The mesonephros was very highly developed. It possessed large numbers of well-developed nephrostomes and it was probable that it was associated in function with the kidneys for some time after the animal was hatched. 2. The rudiments of the cortex of the suprarenal bodies appeared very early, arising from the cœlomic epithelium. The medullary portion of the suprarenals was derived from the sympathetic system and united with the cortex at a very late period in the development of the animal. 3. The ureter, the pelvis, and the tubuli recti arose from the Wolffian duct, whereas the glomeruli and the remainder of the uriniferous tubules were derived from the renal blastema. 4. There were two ventral and one dorsal pancreatic rudiments and all three produced pancreatic tissue. 5. The spleen of the echidna was derived, as in all other mammals, from the mesoderm of the dorsal mesogastrium. It had nothing to do with the entoderm and the pancreas rudiment.

Dr. J. D. LICKLEY (Manchester) read an interesting paper on

The Morphology of the Intertransverse Muscles,

and showed the relations of these muscles to the intercostals and the interarticulares.

Dr. J. CAMERON (St. Andrews) submitted a contribution on

The Ontogeny of the Neuron in Vertebrates,

and illustrated his remarks by lantern slides. His observations showed that the neuroblasts were really nuclei possessing no cytoplasmic envelope whatever. The rudiments of the axis cylinders arose in the form of protrusions from these nuclei. The results therefore gave support to the theories of His and Kölliker, and were, on the other hand, at variance with the theory

of nerve fibres. In reply to

gave an account of his fixative

Dr. ALEXANDER LOW (Aberdeen) described some

Skeletons obtained from Short Cists found in the North-east of Scotland.

He said that the mode of burial and the pottery found alon with the skeletons had characters usually assigned to the bronze age but the skeletons themselves exhibited certain characters differing from those usually ascribed to bronze-age skeletons in Britain. The skulls were very broad, and six out of ten which he examined were hyper-brachycephalic. The face showed no trace of prognathism, the mean gnathic index being distinctly less than that of the average modern Scottish skull. The lumbar vertebræ of one skull exhibited characteristics of the lumbar spine in the dark races. As regards stature, Dr. Low estimated that in six males the average height was five feet three inches, whilst one female must have been just under five feet. After contrasting the skeletons with the ordinary type of bronze-age skeleton Dr. Low referred to the affinities of the short-cist people. He thought they must be descended from the short broad-head Alpine race that occupied central Europe in late neolithic times. It was, however, difficult to see how they came to the north-east of Scotland.

Dr. WRIGHT said that the skulls were of the type named by Sergi *sphenoides tetragonus*, and although the race in the north-east of Scotland was almost a pure brachycephalic one, in cists in Yorkshire of the same period long-skulled populations had been found buried with round-headed ones.

Dr. OTTO GROSSER (Vienna) read a paper on

The Metameric Structure of the Skin in Vertebrates.

After referring to the work of Sherrington and Head he proceeded to contrast the stripes and lines on the fur of certain mammals with the innervation of the skin. The latter part of his paper dealt with the segmental distribution of the arteries of the skin in man, and his researches had confirmed those of Manchot that the distribution of the arteries to the skin was, unlike the nerves, subject to considerable irregularity. Frequently arteries of certain segments were missing and replaced by branches from neighbouring segments.

PATHOLOGY.

FRIDAY, JULY 29TH.

Professor VON NOORDEN (Frankfort-on-the-Main) introduced a discussion on Gout in a paper entitled

The Chemical Pathology of Gout.

After a comprehensive review of all the ascertained and established facts relating to the metabolic processes in gout he summarised them by stating that the oxidising energy of metabolism was not altered; the metabolism of albumin exhibited greater variations than in the healthy, and an increase in the elimination of nitrogen and phosphoric acid appeared during the attacks as well as in the intervals which pointed to the coöperation of endogenous toxic substances the nature of which was unknown. The influence of gout on the functions of the stomach and intestines was discussed and it was pointed out that the irregular results of this influence possessed no specific significance; the excess of nitrogen in the fæces was probably the result of increased nitrogen secretion into the intestinal canal. Endogenous (from the nuclein of the body), exogenous (from the nuclein of the food), and synthetical formation of uric acid took place; the other purin substances were stated to be, in comparison with uric acid, of minor importance. While endogenous uric acid formation did not show any material alteration in quantity from that observed in health, many minor yet important characteristics were observed with regard to exogenous uric acid, particularly in the direction of spontaneous fluctuations in the intervals between the paroxysms. In gouty patients, too, the rise of uric acid after the ingestion of purin substances appeared to be much more delayed than in the healthy. This and other observations pointed to the conclusion that retention of uric acid occasioned gout and was followed by a rise in the uric acid of the urine. Normally only traces of uric acid appeared in the blood, but increase followed over-feeding healthy individuals with purin bodies, although no gouty deposits could be produced. Gouty deposits in the tissues consisted of sodium biurate and it was suggested that acute gouty inflammation depended on the sudden solution of the crystalline deposit, the solution being effected by phagocytic action, not by alterations in the alkalinity of the blood. The theory was put forward that the normal organism elaborated certain organic substances with haptophoric side chains which combined with. and dissolved, uric acid, so removing it from its source of origin by means of the blood and presenting it to the kidneys in a form easily eliminated, whilst the gouty individual manufactured these organic substances in too small quantities. In conclusion the various therapeutic measures at the disposal of the physician and the indications for their exhibition were briefly discussed.

Dr. A. E. GARROD (London) was then called upon to read his paper, bearing a similar title to that of Professor von Noorden. He pointed out that the chief known data bearing on the pathology of gout centred round uric acid and its compounds but that the failure to explain the disease by a study of uric acid had led this substance to be regarded as playing a secondary part in the pathology of gout and its excess in the blood and deposition in the tissues as mere epi-phenomena of the disease, and he contrasted this view with the theory that uric acid even when held in solution in the body fluids exerted toxic properties and played a conspicuous part in the causation of gout. He regarded the presence of excess of uric acid in the blood as an established fact. This excess might possibly be due to over-production the result of tissue metabolism or of excessive ingestion of nucleins or purin substances into the alimentary canal. Over-production should, given normal kidneys, result in increased excretion, but such had never, except during the later stages of an acute case, been demonstrated in gouty individuals. Another explanation of the excess would be diminished destruction of uric acid in the organism, while the theory that the excess was due to the synthetic production of uric acid by the kidneys themselves required the assumption of a backward secretion from the kidneys to the blood for its acceptance. Dr. Garrod regarded with most favour the view that the excess in the blood was due to deficient excretion of uric acid by the kidneys, for it did not necessarily follow that an accumulation due to defective excretion involved a daily output below the normal level, and he pointed out that the consequent retention might either be due to defect of the kidneys which would at once remove gout from the category of metabolic disorders, or to something unusual in the form or combination in which uric acid was presented to the kidneys for excretion. Inborn metabolic instability and heredity and other factors bearing on gout were briefly discussed and Dr. Garrod referred to the result of the microscopical examination of the kidneys of all cases in which uratic deposits were present in the toe-joints appearing in the post-mortem room at St. Bartholomew's Hospital during one year, which showed that more or less interstitial change was present in all; on the other hand, many patients with chronic interstitial nephritis had no deposit in their toe-joints. A promising line for investigation was suggested in regard to the combination in which uric acid existed in the blood of the gouty and the organic compounds of uric acid with, for instance, nucleic acid were mentioned, and it was emphasised that it was as crystalline sodium biurate that uric acid was deposited in the tissues. The suggestion was also thrown out that the articular lesions and uric acid deposits were largely determined by local conditions, such as previous injury.

Dr. W. RINGROSE GORE (Llandrindod Wells) then read a communication on

The Pathology of Gout,

in which he stated that he considered the position of uric acid in gout as a minor one, for among other points the actual amount of uric acid in the blood in gout was in many cases small, in some it was absent, and in very few (if any) reached the amount often present in leukæmia. He considered that the symptoms of gout were undoubtedly toxic in character and due to a toxin circulating in the blood. Digressing to trace briefly the changes taking place in the articular affections of gout he discussed the source of the toxin responsible for the disease and dismissing the possibility of the production of toxin by bacteria actually in the tissues, elaborated the theory that the disease was due to the absorption of toxins produced within the digestive canal by some, at present unknown, specific bacillus which was a normal inhabitant of the intestinal canal; that individuals who possessed what was termed "unstable intestinal secretion," either hereditary or acquired, were prone to gout; and that each attack left an increased tendency to intestinal change which might in aggravated cases become permanent.

Dr. W. J. SMITH JEROME (Oxford) read a brief communication on the subject of

Spontaneous Precipitation of Uric Acid in the Urine,

in which he described comparative experiments upon a gouty individual and a healthy one which showed that uric acid precipitation was controlled by the food supply He then considered briefly the nature of the process concerned in precipitation, and after discussing the solvent powers of solutions of dibasic and monobasic phosphate salts respectively upon uric acid summarised the factors concerned in precipitation as (1) the proportion of acid to the base, (2) the percentage of uric acid, (3) the ratio of uric acid to dibasic phosphate , and (4) the ratio of monobasic to dibasic phosphate

Dr I **WALKER HALL** (Manchester) read a paper on

Variations in the Excreta in Gout

He pointed out the need for the recognition of variations in the excreta rather than permanent alterations Uric acid was to be regarded as a symptom not a cause of the disease Its varying changes offered some hope of ascertaining its origin Experimental variations had been produced in healthy as well as in gouty individuals by the administration of sodium salicylate and the production of constipation and in these instances changes in the uric acid output appeared to occur quite independently of cell destruction After stating the variations of nitrogen proteid and fat which occur in gouty individuals and enumerating the sources of endogenous uric acid and purins Dr Hall described some experiments conducted upon vegetarians and upon gouty patients In each case he had obtained an increased output of endogenous purins after the administration of sodium salicylate Similar results occurred during constipation both in normal and gouty individuals There was no concurrent evidence of increased cell destruction in the body and it seemed possible that the increased output was due to a decreased oxidation of the moiety of uric acid which is normally broken down to urea In some cases of gout the endogenous purins gradually decreased with the progress of the disease, although the exogenous purins were fairly well metabolised throughout The quantity of exogenous purins not excreted within 24 hours was very slight These facts suggested some alteration in the construction and affinities of the endogenous purins as contrasted with the normal properties of the exogenous purins The deposition of urates in the gouty tissues might be reasonably explained by these altered affinities or by the combination of urates and purins with abnormal albuminous substances In gout both exogenous and endogenous purins were in excess in the tissues and produced marked alterations in the lymph flow Dr Hall emphasised the need for a collective investigation upon gout in order to accumulate a large number of facts for further guidance and deprecated the tendency to form hypotheses upon insufficient evidence If further experiments confirmed their power to vary the constituents of the excreta they should soon obtain clearer light upon the etiology of gouty processes

A short discussion ensued on some of the points raised by the previous papers on Gout in which Mrs E L **WALKER DUNBAR** (Bristol) Dr J **HADDON** (Hawick) and Dr **GORE** took part

OPHTHALMOLOGY

FRIDAY JULY 29TH

Keratitis Profunda

In opening a discussion on this subject Mr W T **HOLMES SPICER** (London) said that the cases which he now brought under review were the accumulation of the past six years they were not great in number since the affection was comparatively rare They included only those continuously
watched [illegible] cessity
owing to on the
was in
entity and not merely a variety
all the 54 cases there was no
or acquired 34 cases occurred
he difference might be due to the
greater liability of men to injury and to devotion to alcohol The average age of incidence was 40 years Three fourths of the cases were associated with alcoholic excess especially in beer, with gout rheumatism and intestinal sepsis, whilst the remainder were connected with pyorrhoea alveolaris sciatica, dysentery, and pregnancy It was noticeable that many subjects were prematurely old In seven cases the onset followed injury from blows abrasion or foreign bodies The average duration of the attack was three months, the slightest lasted only three weeks, and the worst 12 months As a rule prognosis for vision was good The condition was characterised by a vascular ingrowth never amounting to a salmon patch, with a progressive opacity of the cornea In 25 cases the opacity occurred as a central disc, a grey patch in the deepest part of the cornea occasionally less dense in the centre than at the rim , in 22 it occurred as a conical opacity advancing from the periphery to the centre An almost constant feature was a striated keratitis, a radial marking from centre to periphery in the disc form, and a marginal finger like marking pointing to the centre in the conical form The lines were slightly uneven, sometimes crossing, rarely of double contour This striation was the earliest symptom of the disease it tended to be obscured by the advance of the opacity The opacity was either uniform or seen to be formed by the fusion of a number of maculæ soft, smooth edged and grey coloured features which distinguished them from the deposits of keratitis punctata Keratitis punctata was noted in 21 cases only , he had been inclined to consider the conjunction of keratitis punctata as a means of classification but later experience showed that the irregularity of its presence and onset in either form of the disease was an indication of severity rather than variety Iritis occurred in only 14 cases , in a very few there was subsequent sectorial atrophy of the iris Tension was increased in only four cases No fundus changes could be detected even at the extreme periphery although he had been prepared to find some , it was possible that any changes existing were so far forward as to be out of the range of the ophthalmoscope The surface of the cornea was roughened like to an orange rind sometimes bullæ formed which on rupture suggested a superficial ulceration In certain cases fluorescin instilled into the conjunctival sac was absorbed and stained the posterior corneal endothelium which was seen as a spotted green layer below the nebulæ The essential pathological condition he considered to be an œdema of the cornea , evidences of this were to be found in the bullæ of the surface and in the wrinkling of Descemet's membrane producing the striæ These were probably sequelæ to the altered condition of the posterior corneal endothelium which being shed in places, indicated by the deep staining reaction allowed the passage of fluid into the proper substance of the cornea Wagenmann in 1890 found that section of the long ciliary arteries produced partial opacity of the cornea with changes in the posterior endothelium and vascularisation of the cornea Koster ligatured the venæ vorticosæ, obtaining a similar parenchymatous keratitis Von Hippel combining these experimental operations was able to observe the early changes in the endothelium of the posterior corneal layers It was probable in the light of these experiments that the clinical picture detailed was due to vascular changes and that the variations in the forms observed were the result of a difference in the vessels affected The treatment was mainly general and dietetic—abstinence from alcohol, the relief of constipation and the imbibition of much bland fluid Mercury had no specific action Atropine to the eye and exclusion of light were of value Neither iridectomy nor peritomy was of use Subconjunctival injections of cyanide of mercury or of simple saline solution had no effect save that they were actually harmful in acute conditions

Mr **HENRY POWER** (London) remarked on the value of the signs obtained by the use of fluorescin which had no been in use in his day He had witnessed cases which he believed to be of the nature described in neglected and ill treated children and following on abrasions in women exhausted by long suckling and in harvesters He strongly urged the hopefulness of corneal conditions Opacities which practically excluded vision for long periods would not infrequently clear up in a marvellous fashion

Dr **CYRIL WALKER** (Bristol) said that his experience indicated that these erratic forms of keratitis were much more frequent in the west country than in London He thought it was not always easy to distinguish them from interstitial keratitis , indeed, he was inclined to doubt their being a distinct clinical entity He had also noted cases of recurrence at intervals from four months to two years Regularity and simplicity of diet he urged as a main factor in their treatment

Mr F M **GRANGER** (Chester) had observed such cases more frequently in women than in men and at a rather earlier average age The lesions were rather of the discrete macular form He had found the administration of dionine of much value

Dr. Koller (New York) remarked on the warnings commonly given against the simultaneous use of iodides internally and mercury externally; doubtless the warning had a general value but in some cases he had witnessed great improvements with this medication. Dionine he also thought of use.

Dr. A. Hill Griffith (Manchester) found a great difficulty in distinguishing these cases from the milder interstitial forms. He asked if anæsthesia of the cornea and anterior hyalitis, as indicated by dust-like opacities in the vitreous, had been noted.

Dr. G. Mackay (Edinburgh) had hitherto restricted the diagnosis to cases in which keratitis punctata was present, but he had recently seen some cases in which this symptom was absent.

Mr. Spicer, in reply, said that he was inclined to consider the cases in children described by Mr. Power as kerato-malacia. He thought the later age of the affection he described and the rarity of a simultaneous affection of the two eyes differentiated it from the commoner interstitial keratitis. He had noted recurrence but it was rare. He definitely excluded all cases in which anæsthesia of the cornea was present, since he believed these belonged to a neuro-paralytic group rather than to a vascular group such as these. He had remarked on his inability to find any indications of uveal inflammation, yet he was not without expectation that it would be ultimately noted.

Dr. Koller described his

Method of using Cocaine by Subconjunctival Injection for Anæsthetising the Eyeball for Cataract or other Operation.

The conjunctiva was rendered anæsthetic by the usual instillation, then two or three minims of a 5 per cent. solution were injected subconjunctivally at a point remote from the site of the intended section. Injection into the episcleral tissue was objectionable owing to the consequent œdema. In glaucomatous cases he combined the injection with eserine. By this means the iris was rendered completely insensible and manipulation was facilitated.

The President (Mr. R. W. Doyne, Oxford), Mr. Spicer, and Dr. Griffith asked questions as to the procedure, to which Dr. Koller replied.

Dr. Lucien Howe (Buffalo, N.Y.) described his researches on

The Time required for a Normal Eye to swing Laterally through a Given Arc.

The determinations were made in a simple manner by photographing simultaneously the movement of a beam of light projected upon the cornea and of a beam from a vibrating fork. By means of a series of photographs he demonstrated the rapidity and equality of the movements in the healthy eye as compared with those of eyes in paresis or other muscular defect.

The President congratulated Dr. Howe on the exquisite simplicity of his methods, the more so as he had himself spent much time and labour on similar experiments but with much more complicated apparatus, the use and results of which he had demonstrated to the section the previous afternoon. Dr. Howe's methods were applicable by anyone with a reasonable anticipation of success.

Dr. A. McGillivray (Dundee) asked whether Dr. Howe had investigated the altered mobility of the eye after such operations as tenotomy and of advancement; he thought the method might elicit some information of the different values of these operations.

Dr. Griffith said that he would like to see the instability of the eye movements in acute alcoholism investigated by the method.

Dr. S. J. Taylor (Norwich) was curious as to the results in nystagmus.

Dr. Howe replied.

Mr. W. W. Griffin (Brighton) exhibited

A Modified Bowman Suction Apparatus for the Removal of Lens Matter in Cataract Extraction.

The feature of the instrument was the automatic withdrawal of the piston by the action of a spiral spring wound round the piston shaft.

Professor Hirschberg (Berlin) said that the operation of suction was almost as old as that of couching. It was practised by the Persians and Arabians certainly as early as A.D. 900. It had been revived in some measure in recent years, but he thought that it was as obsolete as couching.

Dr. James Hinshelwood (Glasgow) read notes of a case of

Pure Word-blindness with Right Homonymous Hemianopsia,

and demonstrated the pathological conditions by beautiful photographs prepared by Dr. MacPhail and Dr. A. R. Ferguson of the pathological department of the University of Glasgow. The patient had completely lost the capacity of understanding word symbols, though he retained the knowledge of figures and could write to dictation. Speech and general memory were good. On death, nine years later, much atheroma of the basal arteries and complete destruction of the left occipital lobe below the calcarine fissure were found. The cuneus and angular gyrus were healthy.

Dr. Hinshelwood also read a paper on

Word-blindness in Children.

These cases were, he believed, rare and not commonly recognised by ophthalmic surgeons. They were characterised by good vision for all purposes except to word symbols. Very careful and laborious individual teaching resulted in the gaining of the faculty in some slight degree.

The President remarked that he did not think the condition so rarely recognised; he had seen some few cases.

Mr. N. Bishop Harman (London) said that he was surprised at Dr. Hinshelwood's belief that the condition was so rarely recognised by surgeons. In London educational work it had long been known, and the affected children were provided with instruction fitted to them in the admirable "Special Schools" of the London Board (now County Council) schools. In the recent report of the work of the medical department of the London Education Committee by Dr. James Kerr, details were given of the condition and progress of several such cases, with reproductions of their performances in writing and figuring. They had so far appreciated the essential inability of these children to learn word-symbols that they no longer sought to teach them the unattainable, but aimed at developing such faculties as they possessed, with the result that some of the defective subjects were able to earn decent wages in after life. He was pleased to find that at least in one department the much maligned English educational system was ahead of the Scottish.

Mr. Sydney Stephenson (London) said that such cases were not uncommon; boys were more often affected than girls. He had recorded two amongst the many published.

The President and Mr. G. E. Wherry (Cambridge) remarked upon features of the cases of the acquired affection.

Dr. Hinshelwood replied.

Dr. George Carpenter (London) read notes of

A Case of Retinitis in a Child with Large White Kidneys.

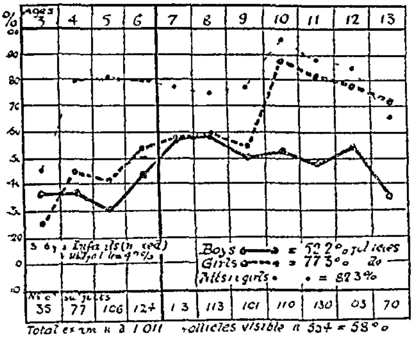
The case was *apropos* of the paper read last year before the Association by Mr. E. Nettleship who commented on the rarity of the conjunction. This case was the only one found during 20 years' observation. The neuro-retinitis was gross and long continued; the diagnosis of kidney affection was made by the condition of the urine and confirmed by the necropsy.

Mr. Bishop Harman read a paper on

The Lymph Follicles in Healthy Conjunctivæ.

The presence of lymph follicles in the palpebral conjunctiva of such a size as to be visible to the naked eye was not infrequently a source of perplexity. In the diagnosis of cases of conjunctivitis it might be questioned, What relation did the follicles bear to the existing inflammation in the case under examination? Were they antecedent and therefore only coincident? Did they indicate some grave tendency, say to trachoma? Or it might be a casual visitor to a school chanced to light on a pupil whose conjunctiva showed many visible follicles and there crowd upon his memory the similitudes of "sago grains," "frog's spawn," and the like to dire conditions of ophthalmia which he had heard at some congress and a storm was raised in the school. Anatomically considered they were minute collections of lymph cells scattered over the conjunctiva immediately beneath the epithelium; they were fairly plentiful in the lower lid, in large numbers in the retrotarsal folds, very sparsely scattered in the conjunctiva which was so firmly attached to the tarsal plate of the upper lid, but were fairly numerous at the angles of this lid; they were absent over the ocular conjunctiva. In structure they did not differ from the many other solitary follicles scattered throughout the mucous membranes of the body. Greeff found that they were visible in 70 per cent. of school children and Delbès in 49 per cent.

of males and in 52 per cent of females In June of last year Mr Harman made a systematic examination of over 1000 children in a London board school situated in the north east district The parents of the children were working folk, the children in the majority were well and cleanly clothed Of 1011 children 554, or 58 per cent, had visible follicles In 342 infants of ages from three to six years 144, or 42 per cent, showed follicles In 341 boys from seven to 13 years of age 178, or 52 2 per cent and in 328 girls of the same ages 232, or 77 3 per cent the follicles were visible The girls thus exhibited follicles in much greater proportion than the boys When the results of the examination of the conditions in girls and boys were plotted down on a chart for each year of life (see chart) it was noted that between the ages of three and nine years the curve of incidence for boys and girls was almost the same, the difference came in suddenly and markedly in the tenth year and persisted for the remaining years of school life, a separation averaging about 30 per cent At the time of this examination he had noted the condition of the hair of the head of the girls These figures showed a similar curve to that of the follicles in the girls There was a fair average level between the ages of four and nine years, then a sudden rise of 20 per cent in the tenth year followed by a slow decline in the subsequent years Inquiries showed that at about the age of ten years the girls were expected to take up their share of the home duties With this responsibility came the liberty to look after themselves hence the increase of the nits from neglect of the person, and with this an increase of the lymphatic structures indicative of diminished good health When personal pride came in as a factor the person became cleaner, the curve of nits fell and with better cleanliness and health the curve of the follicles also declined "Folliculitis" or any term that would indicate the existence of an obvious inflammation had been avoided, indeed, there were no signs of inflammation of the conjunctiva of any sort There were some few cases in which the follicles were gross in their size, yet there were no signs of inflammation Recently extreme cases of this kind had been seen at hospital Two were Jewish emigrants desirous of proceeding to America but who had been inhibited by the shipping agent, the third was an English lad In all these cases the follicles were as large and prominent as they well could be, they had a normal distribution, the lower folds were filled with row on row of large pale oval bodies each about 1 5 by 3 millimetres the upper fold of transition and the angles were similarly crowded, and a few were dotted here and there over the upper tarsus In the two youngest patients there were
the upper ocular c
epithelium of the
quite normal in appe—
could be seen passing over them in their normal course Of symptoms associated with the eye condition there were none



The incidence of visible follicles in the conjunctivæ of healthy school children

the lids to the ocular conjunctiva The other cases were treated by the gentlest expression possible and with blue stone, in a month from the time of the expression the conjunctivæ were normal in appearance, there was no scarring save for the fine line which marked the site of a portion excised for histological examination One of these latter cases left for America and since he had never reappeared Mr Harman judged that he had passed the immigration officers, but the boy who was treated by "brossage could never get to America, his scarred conjunctiva told a tale which would bar him at every port Sections of the mucosa taken from *two cases showed an absolutely normal conjunctiva, save for* the monstrous size of the follicles The epithelium was normal, the submucosa was delicate and free from signs of inflammation the follicles, although monstrous in size formed exactly to the anatomy of a solitary follicle, as seen, say, in the gut, the cells were soft and round, packed in proper zones and there was no excess in the endothelial stroma, *in looking at the sections the remark of Brush, the* discoverer of the follicles of the conjunctiva, that they and the follicles in Peyer s patches were similar was irresistibly brought to mind The feature of these conjunctivæ was an immense increase of the lymph cells of local origin an abnormal development or rather, accumulation of cells in the local follicles which had failed to pass in due course into *the lymph stream and a lymph follicle stasis* There was no leucocytosis of external origin None of these features conformed in any way to trachoma, which was characterised by a marked hyperplasia of the endothelial stroma of the follicles and general adenoid tissue of the lids Such sections could have been obtained from most of the 563 children in the school of 1011 If the condition were, as was held by some trachoma then all these children were condemned to the diagnosis, a conclusion which was absurd Such conditions of the lymph follicles were not contagious, there was no danger of these cases setting up a vicious condition of the same or any other order in their neighbours, the subject of the disorder was, however, liable in the unhealthy and stagnant state of the local lymph circulation and general ill health to fall a victim to any virus that might be about with the result that the contraction of a simple catarrh that would pass almost unnoticed in another would in such a case look serious and receive the formidable name of follicular conjunctivitis" and the child be excluded from school as dangerous He examined bacteriologically 12 consecutive cases of this order In seven the brief history of acute symptoms indicated a catarrh supervening on follicular hypertrophy the determining causes of the inflammation were found to be Koch-Weeks s bacillus twice, Morax bacillus once, steptococcus once and staphylococci thrice All the cases made a rapid recovery Of five, in which the diagnosis was complicated by a somewhat lengthy history and some tendency to papillary exaggeration, three were finally diagnosed as simple conjunctivitis, one proved to be trachoma, and one remained in doubt The conclusion from this evidence was that *a diagnosis of* follicular conjunctivitis was defective, it did not take into consideration the frequency with which enlarged follicles were seen in healthy subjects, it gave no indication whether the case was to be taken *to be a simple catarrh* occurring in such a subject or whether the examiner conceived it to be something of a more serious nature

The PRESIDENT and Dr ADOLPH BRONNER (Bradford) asked questions to which Mr HARMAN replied

Dr BURNHAM (Toronto) read a paper on

The Combined Treatment in Disease of the Eye, especially in that of the Uveal Tract

This combined treatment of the internal administration of mercury and the iodide of potassium associated with the hypodermic injection of pilocarpine he had practised for 15 years He described two cases of sympathetic ophthalmia, one in which the acute attacks were stayed and after nine *months* vision improved from perception of light to $\frac{6}{18}$ The second case, of similar order, in an active state but of longer duration had only perception of light minus tension, and occluded pupil Under the combined treatment for eight months the eye became so quiet that he felt justified in removing the lens with a result that visual acuity reached [illegible] and J 1 No relapses had occurred in either case after several years In a case of chronic articular rheumatism with transverse calcareous band useful vision was obtained, one of acquired syphilitic cyclitis with occluded pupils and qualitative vision obtained in one and a half years $\frac{20}{40}$ vision in one eye and $\frac{20}{20}$ in the other. In some severe types of hypopyon kerato-iritis and in old sclero-keratitis the clearing of nebulæ was marked; these were cases in which all other measures had failed. He considered the combination of drugs which he had used peculiarly adapted to promote vigorous tissue change.

Dr. BRONNER read

Notes on a Case of Thrombosis of the Cavernous Sinus due to Empyema of the Sphenoidal Sinus.

Cases of thrombosis of the cavernous sinus were not very common. This case, occurring in a slightly anæmic but otherwise healthy girl, was remarkable in that it was impossible to account for the origin of the thrombosis during life. The nares were healthy. There had been no abnormal discharge from the nares. There had been some severe headache and pain but no sickness; this was followed in a few days by slight swelling of the right eyelids, chemosis, and well-marked proptosis. There was no strabismus but movements of the eye were limited. The fundus was normal. The symptoms gradually grew worse. The temperature varied between 99° and 103° F. A rigor, with a temperature of 104·6° and profuse perspiration, occurred despite treatment with calomel and local leeching. Cerebration was slightly impaired, but questions were answered correctly though slowly. After a fortnight the symptoms diminished and swelling of the retinal veins of the right eye was noted. On a relapse antistreptococcic serum was injected several times without benefit. The temperature rose to 105° and 106° almost daily and there were several slight rigors and the left jugular vein became inflamed. Vision of both eyes was fairly good considering the patient's mental condition. On the eighteenth day offensive diarrhœa set in and continued until death on the thirtieth day. Post mortem both cavernous sinuses were found to be filled with purulent thrombus. The left lateral and petrosal sinuses were gangrenous, the longitudinal sinus being filled with clot. There was some pus (sweet) at the apex of both orbits. Both sphenoidal sinuses were full of pus and granulation tissue; the septum was practically destroyed. The ethmoidal and frontal cells were apparently not affected. The empyema of the sphenoidal sinus doubtless caused the thrombosis of the cavernous sinus. This was an exceedingly rare occurrence. The absence of disease in the sphenoidal sinus, the late and slight affection of the optic disc and retinal veins without retinal hæmorrhages, and the absence of cerebral irritation and vomiting were remarkable. Operation was proposed but was not consented to. Germain[1] had collected 182 cases of thrombosis of the cavernous sinus with 16 recoveries. 134 necropsies were recorded. In 31 cases one sinus only was affected; in all the others both were affected.

The proceedings closed with a vote of thanks to the President, Vice-Presidents, and secretaries, proposed by Mr. POWER and seconded by Dr. HOWE.

Attached to this section was an exhibition of surgical and x-ray instruments and a pathological museum. Experiments relating to Colour Vision were demonstrated by Dr. G. J. BURCH, F.R.S.; on Colour Blindness, by Dr. F. W. EDRIDGE-GREEN; and on Colour Photography, by Miss ACLAND. Instruments were exhibited by Mr. A. MCGILLIVRAY, Dr. E. MADDOX, Mr. S. STEPHENSON, Dr. K. GROSSMANN, and Mr. ANDREW LITTLE. A large series of pathological specimens and drawings were shown by the PRESIDENT, Mr. W. H. H. JESSOP, Mr. STEPHENSON, Mr. VICTOR MILLER, Mr. OGILVIE, and Professor M. M. MCHARDY; and Demonstrations on the Variability of the Fields of Vision with different illumination in cases of Tobacco Amblyopia were given by Mr. N. BISHOP HARMAN.

THE PATHOLOGICAL MUSEUM.

IT was at a meeting of the British Medical Association at Oxford in 1868 that the annual museum of the Association was first initiated and it is at Oxford in 1904 that the museum has been reinstalled in its rightful position. The idea of the founders was that it should form a means of bringing the mass of the profession into touch with recent pathological methods and data, especially such as had some bearing upon the practical work of the profession, and that these annual exhibitions should summarise, as it were, the work done in pathology during the preceding year from a clinical, anatomical, and laboratory standpoint. The advances made in pathology and the new light thus shed upon the science of medicine during the 36 years have been extraordinary. But the annual pathological exhibition of the Association has not, as has been pointed out on more than one occasion in these columns, kept pace with the advances in the science of medicine. This year, however, the museum has once more taken its proper place, and the wealth of material collected in two large rooms, conveniently adjacent to the pathological and anatomical sections of the Association, affords examples of nearly all the departments in which recent researches have been made. Indeed, so handsome was the response to invitations this year that the collection in the museum proper was a trifle overcrowded and there were also two overflow exhibitions. The excellent collection of ophthalmological specimens was housed in the junior common room of Keble College and the section of dermatology arranged specimens supplementary to those shown in the Pathological Museum at the meeting-place of the section.

Tropical diseases were well represented. In this department of medicine many curious names unheard of before are now becoming quite familiar even to those who spend their days in Great Britain. The trypanosoma has occupied a good deal of attention lately. It is a flagellated protozoon or worm-like organism found free in the blood and moving with a screw-like progress, blunt at one end, with a flagellum at the other, its length including the flagellum being only about 18μ. It produces a disease called trypanosomiasis, long known in West Africa, characterised by irregular pyrexia, erythematous rashes, and enlargement of the liver and spleen. It has more recently been found in the blood of patients suffering from the disease known as "sleeping sickness," a disease in which polyadenitis is a prominent feature. When the trypanosoma gains access to the cerebro-spinal fluid (although it may have previously existed for years in the blood) the patient develops the narcotic symptoms of sleeping sickness. Interesting specimens illustrating the life history of the trypanosoma and the pathology of "sleeping sickness" and kala-azar were exhibited by Dr. David N. Nabarro (London) and Dr. G. C. Low (London) respectively. Kala-azar is a disease in which enlargement of the spleen occurs. It is met with in China and other malarial districts and was for a long time confused with malarial fever. Certain bodies have now been found in this disease, known after their discoverers as Leishman-Donovan bodies, which are believed to have some relation to the trypanosoma, though what that relationship is still remains to be worked out. The nature of these remarkable bodies has been much debated and only quite recently a telegram, dated June 29th, has been received from Captain Leonard Rogers, I.M.S., stating that he had succeeded in developing the trypanosoma from cultures of the Leishman-Donovan bodies. It would seem probable, therefore, that the trypanosoma in its various phases of evolution is responsible not only for the condition known as trypanosomiasis but also for "sleeping sickness" and for kala-azar. Excellent photographs and sketches of ankylostomiasis and bilharziasis (two grave forms of anæmia resulting from their respective parasites) were exhibited by Dr. F. M. Sandwith (Cairo); internal lesions produced by ankylostoma by Dr. M. Armand Ruffer (Egypt); and specimens of "kra-kra" or "craw-craw" by Mr. J. Dencer Whittles (Birmingham). Craw-craw is a papulo-pustular eruption somewhat resembling scabies and occurring mainly among the inhabitants of South Africa. In connexion with the last-named disease a photo-micrograph was exhibited of the nematode worm (filaria perstans) causing this disease, which had been found in the blood of a female patient resident at Tenby, South Wales, in whom infection had taken place at Birmingham whilst on a visit in February, 1903. It would have been interesting to know the source and mode of infection.

In neurology the scientific worker requires to be patient and to be content to devote much time with the prospect of what appears to be a very small return. The microscopical sections exhibited by Dr. F. Griffith (Liverpool) and Dr. W. B. Warrington (Liverpool) illustrated the truth of this. These sections revealed the changes which take place in the posterior spinal ganglia after section of their various connexions. They represented a good deal of laborious work. We know that the cells of the spinal ganglia have some special relation with the sympathetic system and a marvellous but ill-defined trophic action on the skin and other tissues. We know, for instance, that the lesion of herpes is situated in these ganglia. Disorders of the sympathetic and vasomotor systems have received a good deal of attention lately from a clinical standpoint, and these structures would well repay a careful anatomical and physiological study in the laboratory. A knowledge, for instance, of the control which sympathetic system would be of lows (Lancaster) and Dr. David nine microscopic specimens prepared by Marchi's method showing acute lesions of the posterior columns of the spinal cord Fine bacilli were seen within the cell bodies and in their immediate neighbourhood. These observations are in keeping with the researches of Dr James Taylor and others into the now well-known toxic origin of spinal sclerosis Dr J S Collier (London) and Dr D F. Buzzard (London) exhibited specimens and photographs taken from four cases of congenital diplegia in three of which certain congenital deficiencies in the nervous system were discovered There is no doubt that some cases of congenital diplegia are due to injuries at birth but these specimens add further proof that a good many of them are dependent on abnormal or arrested development of the hemispheres and other congenital deficiencies in the nervous system. Incidentally Dr Collier's method of staining nerve cells (which has been described in the *Review of Neurology and Pathology*) was illustrated

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[1] Boston Medical Journal, May 1st, 1902.

The pathology of cancer was well illustrated by observers holding diverse views Dr. E. H Bashford (London) and Mr J. A. Murray (London) exhibited specimens illustrating the preliminary changes which take place in the nucleus and in the chromatin of the nucleus in the development of cancer, the cell of the somatic and heterotype mitoses in trout, and the cell conjugation in transplanted mouse tumour, changes which these gentlemen regard as essential and as pointing to the origin of cancer in a "physiological rest" or residue of embryonic tissue rather than the result of a protozoic process Dr. W Ford Robertson (Edinburgh) and Mr. Henry Wade (Edinburgh) on the other hand exhibited specimens illustrating the development of plasmodia in the turnip in the disease called "finger and toe" These observers regard the disease as a protozoic process and if, as they maintain, this plasmodium in the turnip is identical in the stages of its growth with the protozoon found in cancer their results will prove extremely interesting. Fuller details of their views were given in the demonstrations at the Vice-Chancellor's conversazione and are reported in THE LANCET of August 13th, p 467

The pathology of acute rheumatism was illustrated by some observations made by Dr W Vernon Shaw (Oxford) and Dr J. M. Beattie (Edinburgh), both of whom exhibited the lesions produced by artificial inoculation of acute rheumatism in animals The results arrived at by these observers fully bear out the statements of Dr F J Poynton and Dr Alexander Paine and go far to show that acute rheumatism is due to a specific microbe. The diplococcus has been isolated, the inoculation of cultures has produced the same disease in animals, from whom again the characteristic diplococcus has been collected—in short, all the classical tests of an organism being the specific cause of a disease, as required by Koch, have been fulfilled

Cardio- Dr G A. Gib of specimen ral of which were of tuberculous origin One of these had been diagnosed during life chiefly by the paradoxical pulse, a pulse intermitting every fourth beat in correspondence with the respiratory rhythm Professor T Clifford Allbutt (Cambridge) exhibited a specimen of chronic aortic stenosis occurring in an elderly man who had suffered for the last two or three years of life from typical attacks of Stokes-Adams' disease, during which the heart beats had numbered only eight to 12 per minute A large number of very careful drawings of the microscopic changes in the liver in mitral stenosis and other cardiac conditions, accompanied by specimens of the liver to show the naked-eye appearance, were exhibited by Dr R N. Salaman (London). Several important contributions have recently been made to the subject of arterial disease. Unfortunately considerable confusion exists as to the meaning of the term atheroma, which in Germany appears to be regarded as identical with arterial sclerosis Many English observers, like Dr W Russell,[2] regard atheroma as a totally distinct affection The specimens and photo-micrographs exhibited by Dr. T D. Savill (London) go to confirm this view. Among other cases he had investigated that of a woman, aged 100 years, who had presented extremely profuse atheroma not only in the larger arteries (which is usual in old people) but even in the ultimate ramifications of the smallest vessels She had died from hypostatic congestion of the lungs and had never exhibited circulatory symptoms of any kind during life Others of Dr Savill's specimens illustrated the anatomical condition which he has described as arterial hypermyotrophy[3] and the subsequent degenerations which take place in the tunica media—i e, the muscular and most important coat of the arteries

Interesting specimens bearing on gynæcology, too numerous for us to notice in full, formed part of the museum. Dr James Ritchie (Oxford) and several others exhibited specimens of chorion epithelioma, a disease due to the inclusion of the trophoblast in a part of the body distant from that in which it is usually found. Mr Cuhtbert Lockyer's series were very interesting, especially one of them which showed how a fibromyoma may become sarcomatous and malignant Dr. Nathan Raw (Liverpool) showed a number of specimens of tuberculous disease which illustrated his paper on Human and Bovine Tuberculosis delivered in the Section of Medicine.

In the department of surgery there were also many interesting exhibits We have rarely seen anything more perfect of their kind than Mr. W. G. Richardson's (Newcastle-on-Tyne) series of specimens illustrating the anatomy, comparative anatomy, development, and pathology of the prostate and male genitalia Removal of the prostate gland is coming more and more into vogue with surgeons, and these specimens, together with those exhibited by Mr. John T Hewetson (Birmingham) and Mr P. J Freyer (London) who advocates the suprapubic method, were particularly opportune. A series of very instructive radiographs, illustrating Colles's fracture and congenital dislocation of the hip treated by Lorenz's method, were shown by Mr Robert Jones (Liverpool) and Dr David Morgan (Liverpool), and a great number of other diseases of the bones and joints were illustrated These specimens would have well give to the were avail Tyne) exhibited a life sized model, together with photographs illustrating the effects of lightning Two men were seated under a tree and the lightning swept from the tree to the ground between the men, throwing them many yards apart It tore the boot and clothes of one of them into ribbons down the right side Yet, if we may judge by the photographs, the patient completely recovered Another extraordinary case was that of a young man in whom four inches of a hay fork became imbedded in the superior maxilla and remained there for two years. Another specimen exhibited the effects of a tooth-plate which had perforated through the œsophagus into the left bronchus and which was removed by posterior œsophagotomy Specimens illustrative of the absorption of ligatures were exhibited by Sir William Macewen (Glasgow), By various methods of preparation a ligature can be made to undergo absorption in the wound at the end of three, four, five, or more days, according to the requirements of the case The wound is dressed simply with a strip of gauze painted over with collodion which can be peeled off on the desired day bringing with it the unabsorbed part of the ligatures At these annual exhibitions there is generally a collection of appendices removed by operation Dr. G Grey Turner (Newcastle-on-Tyne) and Dr W Blair Bell (Liverpool) exhibited a particularly interesting series of specimens removed during the preceding year or two which had been studied and labeled with extreme care Mr. F M. Caird (Edinburgh) showed fifty preparations to illustrate the surgery and pathology of the stomach, intestine, and kidney.

Several useful models were on view Mr H G Armstrong (Crowthorne) showed a "waistcoat pocket" albumin testing apparatus, Dr J Mackenzie (London) a sphygmograph and blood-pressure recording instruments, Dr. I. Walker Hall (Manchester) a purinometer for the clinical investigation of urinary purins, and Mr. C. W. Cathcart (Edinburgh) showed a cast illustrating an improved method for making papier-mâché casts of pathological specimens or dissections The facility with which these casts can be made should recommend them to those who wish to make their museums complete. The great usefulness of skiagraphy in medicine was proved by the excellent skiagraphs of acromegaly, chronic pulmonary osteo-arthropathy, and myositis ossificans exhibited by Dr. G. A. Gibson (Edinburgh), and those of early pulmonary tuberculosis, and pleural effusion shown by Dr. A. Stanley Green (Lincoln). The drawings and colour sketches were of unusual excellence. One of these, a case of facial ecchymosis and pigmentation occurring at the catamenial periods, afforded another example of the close association between the menses and the vaso-motor sympathetic system. Such cases should be investigated side by side with the *edème bleu* of Charcot and the angio-neurotic œdema which has lately been receiving attention. The investigation would be a difficult one, because it would necessitate a simultaneous study both of the sympathetic system and the peculiar qualities of blood at the time. A number of interesting specimens were exhibited to show the efficiency of the two, three, and four colour printing processes. Photography in colour and its methods were demonstrated and photo-micrography was shown in a high degree of perfection by Mr. Albert Norman (London) and Dr. W. A. P. Waters (Oxford).

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[2] THE LANCET, June 1st, 1901, p 1519.

[3] Transactions of the Pathological Society of London, 1904

It has been impossible in the space at our disposal to notice more than a few of the leading examples in this excellent collection. We are glad to observe that the suggestion made in these columns last year, that short demonstrations on the museum specimens should be held from time to time, was carried out at the Oxford meeting. On Wednesday lantern demonstrations of colour photography were given by Mr. E. Sanger Shepherd and Mr. J. Hall Edwards; on Thursday, Dr. A. E. Wright demonstrated the preparation and use of the pipettes which he has introduced for bacteriological research, Dr. R. N. Salaman gave a demonstration of the reservoir action of the liver in cardiac disease, and Dr. Walker Hall demonstrated his purinometer; and on Friday Mr. C. W. Cathcart gave a lantern demonstration illustrating the gradation of malignancy in bone tumours. The number of visitors to the museum was one of the largest within our recollection. The interchange of views between members meeting from a distance and the discussion of the specimens, which were continuously carried on from the opening to the closing of the museum were of the most instructive kind. Such discussions added not only to the interest but to the scientific value of these gatherings. There is no doubt that the Pathological Museum was one of the most attractive features of this year's meeting of the Association, and Dr. James Ritchie, Dr. E. W. Ainley Walker (the secretary), and the committee are to be congratulated heartily on their unqualified success.

Looking Back.

FROM

THE LANCET, *SATURDAY*, AUGUST 19, 1826.

DIRECTIONS FOR THE USE OF THE STETHOSCOPE.[1]

Almost seven years have now elapsed since LAENNEC proposed mediate auscultation as a mode of exploring the diseases of the thoracic viscera: a period sufficient in this busy age of investigation to try the merits of any hypothesis; and to outlive such a probation is almost enough to ensure permanent popularity. After various trials with materials of different density, a perforated cylinder of moderately light wood has been found the most convenient; and what may appear at first in opposition to an axiom in physics, in the present case the most accurate conductor of sound. To this cylinder the name *stethoscope* has been given; a name which very well expresses its principal use. The stethoscope merited, and has now obtained the patronage of the majority of scientific practitioners, and up to the present time has had the rare fortune of being without one decided public opponent. It is employed almost universally in France, and extensively in Germany, but as yet not so frequently in this country as it deserves; we are therefore glad to find that Sir JAMES MACGREGOR has recently ordered the army surgeons to use it generally, and to report the results of their investigations.

The appointment of LAENNEC to La Charité gave to him and to the numerous students who attend his clinic from all parts of Europe, more frequent opportunities of studying auscultation, than they could have ever hoped for at the Necker Hospital; and it is to this circumstance we are principally indebted for the improved shape in which the present edition of his work has appeared.[*] We regret to say that his health is in a very precarious state; he is obliged to leave the clinic to the superintendence of others, and is gone into Britany, where he will pass the summer.

The first edition of Laennec's work has been translated into German, under the superintendence of Dr. FRORIEP, at Weimar, and into English by Dr. FORBES; it has also found its way into the Italian and Russian languages. The last edition of the valuable work of BERTIN,[*2] edited by his friend Bouillaud, on the diseases of the heart and large vessels, and the clinical reports published by LERMINIER and ANDRAL,[†] contain many facts illustrative of the use of the stethoscope. Dr. FORBES,[‡] also, in 1824, published a considerable number of cases observed at the Chichester Dispensary; but the greatest number of interesting facts has been collected by Dr. LOUIS of Paris, who during the past year has published a very respectable work on pulmonary consumption.[§] It is true that Andral has given a negative testimony against some of the signs said to be afforded by the stethoscope, but this is of no great weight, since Laennec had before admitted the existence of the same objections, under certain circumstances.

Many persons have inquired why Laennec has called it *mediate* auscultation; it is to distinguish it from *immediate* auscultation, or the direct application of the ear to the chest; a mode of examination with which the father of physic was so well acquainted, that he thought he could distinguish a serous from a purulent effusion in the thorax. "You will know by that," says he, "that the chest contains water and not pus, if by applying the ear for some time to the parietes, you hear a sound like to that of boiling vinegar."[‖] It is singular that the passage never arrested the attention of physicians so as to induce them to make any use of it; the commentators of Hippocrates passed over it as a matter of little consequence, and Laennec confesses that many years before the idea of mediate auscultation suggested itself, he had read the same passage without exciting any particular attention.

In the summer of 1816, Laennec was called to a young lady who presented the general symptoms of disease of the heart; the application of the hand to the chest, and percussion, afforded very little assistance, and immediate auscultation was interdicted by the sex and *embonpoint* of the patient. The recollection of the well known fact, that the tap of a pin at one end of a beam could be heard distinctly at the opposite end, induced him at the moment to avail himself of this acoustic phenomenon. He took a quire of paper, rolled it tightly together, applied one extremity over the region of the heart, and putting the ear to the other, was surprised to find that he could distinguish the pulsation of the heart in a more distinct manner than he could before do with the naked ear. Having hit upon the principle, he extended its application to the investigation of the various sounds produced in the chest by the respiration, the voice, and the accidental presence of fluids in the lungs, pleural sacs, and pericardium. He immediately commenced a series of observations at the Necker Hospital, which have afforded a large number of new and safe signs, easy to be understood for the most part, and calculated to make the diagnosis of almost all the diseases of the lungs, pleura, and heart, more circumstantial and certain than the surgical diagnostics established by the aid of the probe or the finger.

[*] Traité de l'Auscultation Mediate et des Maladies des Poumons et du Cœur. 8vo. Paris, 1826.

[†] Clinique Medicale, tome III. Paris, 1826.

[‡] Treatise on Percussion; an extended analysis of this work, which contains also a translation of Avenbrugger's, will be found in THE LANCET, Vol. V. Nos. 4 and 5.

[§] Recherches Anatomico-Pathologiques sur la Phthisie Pulmonaire, Paris, 1825.

[‖] The passage is as follows:—*Τούτῳ ἢν γνοιης, ὅτι οὐ πυον, ἀλλὰ ὕδωρ ἐσι. καὶ ἢν πόλλον χρόνον προσεχων τὸ οὐς ἀκουαζῃ προς τὰ πλευρα ζέει ἔσωθεν οιον ψόφος.* Hipp. de Morbis, II. Sect. 59, according to the text of Froben and Mercurialis; but Vanderlinden has *ὤζει* for *ζέει*; we know not upon what authority.

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[1] An excerpt only has been transcribed.

[*2] Traité des Maladies du Cœur et des gros vaisseaux, redigé par Bouillaud. Paris, 1824. For an analysis of which, see THE LANCET, Vol. V. No. 7.

THE LANCET.

LONDON: SATURDAY, AUGUST 20, 1904.

Mr. Balfour on the New Theories of Matter.

IN his presidential address delivered before the British Association for the Advancement of Science at Cambridge, an abstract of which we publish this week, Mr. BALFOUR, with the candour and simplicity which have made him so engaging and forceful a personality, disclosed to his audience his personal views of the new theories of matter. The Prime Minister is not an original worker in the domain of science or an expert in laboratory procedure, but the reflections which the new theories of matter have suggested to his mind bespeak a profound observer as well as a close student of the work going on in many scientific fields. It will be remembered that Mr. BALFOUR'S illustrious uncle, the late Lord SALISBURY, who was president of the British Association at Oxford in 1894, delivered on that occasion a very able and remarkable address entitled "The Unsolved Riddles of Science." The lesson conveyed by Lord SALISBURY was that all around us there lie strong proofs of intelligent and benevolent design, but Mr. BALFOUR approaching a similar theme with a more vaguely philosophic equipment is not able to come to quite so concrete a conclusion. He has been tempted to review our ignorance rather than our science. There is a pessimistic tone throughout his address, for the achievements of past researches, despite their brilliance, would seem to suggest to him how hopeless it is to expect that the final clue to the central mystery will ever be found. Whilst admitting that the advances of each section of knowledge have been great the hope of understanding the origin and meaning of life is as far off to him as ever, and his lesson appears to be that human power and perception have limitations against which it is useless to struggle. The danger of such reflections is that they may tend to damp the praiseworthy enthusiasm of the investigator. They would do so were it not that the man who is in earnest is proud to win even "a small strip from the desert" and so to push forward the boundary of the oasis of knowledge in which we live. Let us at least have the joy of accumulating knowledge, though there may be no prospect of the last goal ever being reached. The beautiful peroration of an address delivered by Sir WILLIAM CROOKES on a similar occasion ran as follows: "Steadily, unflinchingly," he said, "we strive to pierce the inmost heart of nature, from what she is to reconstruct what she has been, and to prophesy what she yet shall be; veil after veil we have lifted and her face grows more beautiful, august, and wonderful with every barrier that is withdrawn." These are the sentiments which stimulate the true worker, and we regret any limitations being even theoretically set to our intellectual march forward.

The extraordinary stimulus given to our conceptions of the nature of matter by the discovery of radium and by a consideration of its marvellous properties was probably all the time in Mr. BALFOUR'S mind though throughout the address the subject was not mentioned. He, in common with many, has no doubt sustained something like a mental shock to learn that no longer must the atom be regarded as the smallest conceivable particle of matter but rather as a tiny cosmos in itself, swarming with electrified particles travelling freely in all directions, which particles or electrons may appear at one time as matter and at another time as force. "There are those," he said, "who regard gross matter, the matter of every-day experience, as the mere appearance of which electricity is the physical basis; who think that the elementary atom of the chemist, itself far beyond the limits of direct perception, is but a connected system of monads or sub-atoms which are not electrified matter but are electricity itself." Again: "Two centuries ago electricity seemed but a scientific toy. It is now thought by many to constitute the reality of which matter is but the sensible expression. It is but a century ago that the title of an ether to a place among the constituents of the universe was authentically established. It seems possible now that it may be the stuff out of which that universe is wholly built." With characteristic subtlety of phrase he adds that matter is not merely explained, but explained away, by assuming that the atom is now no more than the relatively vast theatre of operations in which minute monads perform their orderly evolutions, while the monads themselves are not regarded as units of matter but as units of electricity. Mr. BALFOUR next proceeded to show by a somewhat original line of reasoning how really unfitted man is, after all, to comprehend all around him in spite of his remarkable success in bringing wonderful phenomena to light. "It is certain," he said, "that our powers of sense perception and of calculation were fully developed ages before they were effectively employed in searching out the secrets of physical reality, for our discoveries in this field are the triumphs but of yesterday. The blind forces of natural selection, which so admirably simulate design when they are providing for a present need, possess no power of prevision and could never except by accident have endowed mankind, while in the making, with a physiological or mental outfit adapted to the higher physical investigations. So far as natural science can tell us every quality of sense or intellect which does not help us to fight, to eat, and to bring up children, is but a by-product of the qualities which do. Our organs of sense perception were not given us for purposes of research, nor was it to aid us in meting out the heavens or dividing the atom that our powers of calculation and analysis were evolved from the rudimentary instincts of the animal." Upon this exposition follows Mr. BALFOUR'S conclusion. It is, he thinks, due to these circumstances that the beliefs of all mankind about the material surroundings in which it dwells are not only imperfect but fundamentally wrong.

The gist of Mr. BALFOUR'S reflections suggested by the new theories of matter is contained in his forcible presentation of the case in the following sentences: "Extend the boundaries of knowledge as you may; draw how you will the picture of the universe; reduce its infinite variety to the modes of a single space-filling ether; retrace its history to the birth of existing atoms; show how under the pressure of gravitation they became concentrated into nebulæ, into suns, and all the host of heaven; how, at least in one small planet, they combined to form organic compounds; how organic compounds became living things; how living things, developing along many different lines, gave birth at last to one superior race; how from this race arose, after many ages, a learned handful who looked round on the world which thus blindly brought them into being and judged it and knew it for what it was—perform, I say, all this and though you may, indeed, have attained to science in nowise will you have attained to a self-sufficing system of beliefs." It would, indeed, be a remarkable consummation of the penetrative instincts of the human race if the fundamental truth should be so clearly revealed that it would be impossible for a sceptic to remain. We cannot, some would say we must not, expect so much; but the more, to use Mr. BALFOUR'S words, we attain to science the more chance is there of appreciating the wider and deeper lessons taught by the universe, and the less reason will there be for resigning ourselves to the belief that thus far and no farther may we go.

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Colonies for Epileptics.

THE letter from our Australian correspondent which appeared in THE LANCET of August 13th contained an account of a deputation organised by the National Council of Women which recently waited on the Minister of Lands to obtain, if possible, a grant of an area of land suitable for the establishment of a colony for epileptics. The deputation pointed out that in the community of Victoria there were from 1600 to 2000 persons suffering from one of the most distressing afflictions with which humanity is acquainted. Only one-fifth of the number of known epileptics could be provided for in existing institutions, and the deputation further pointed out that epileptic children were prevented from obtaining occupation in the ordinary way and that the development of the disease was favoured by the want of proper mental training. The Minister's reply was of the usual kind. It sounded stereotyped and temporizing, but it must be recognised that on the spur of the moment responsible officials can only respond to deputations in this way. Nothing is gained by the promise of reforms or innovations which the Government may not be able to carry out. The Minister of Lands said that his entire sympathy was with the deputation and that he would see what could be done, but the question of available land that was also suitable could not be settled offhand.

Epilepsy has from the earliest ages been regarded as peculiarly distressing and its pathology is in many directions still unknown to us. The suddenness of the attack, the racking convulsions, and the falling down gave the old observer the impression of an onslaught by some evil spirit, and hence the Greek term for the disease, ἐπίληψις. Hence, also, possibly the word used by our Anglo-Saxon ancestors "onfall," though it is not known for certain what "onfall" was. But it is almost certain to have been epilepsy, so well known to the people under its common title, the "falling sickness." Owing to the uncertainty of the time of the attacks and in many instances to their occurrence without any warning or "aura" the epileptic is rendered quite unfit for most ordinary occupations of life. Unless he can be constantly watched by someone he must be ever in peril and perhaps a source of peril to the community. He may injure himself by the mere violence of his fall, in crowded streets he may be run over, or, as of old, it may be that "ofttimes he falleth into the fire or into the water." He is a burden to himself and to his friends. An epileptic among the labouring classes is almost precluded from obtaining any employment whatever, while as for treatment, although the effects of the administration of one of the bromides are very marked and in many cases, up to a certain point at least, successful, yet, as Sir WILLIAM GOWERS has remarked, "bromide has its drawbacks. It is not surprising that it should often interfere with the normal function of the brain; the marvel is that it should so often arrest the abnormal and leave the normal almost or completely undisturbed." The difficulties which encompass the life of an epileptic have therefore led to the establishment of colonies in which those suffering from epilepsy can live under the care of those who can tend them during an attack and ward off the dangers. A peculiarly sad feature about this disease is that it can exist coincidently with the highest mental and moral qualities and, without going so far as some modern writers have done in this direction, it may safely be said that many men of genius have been epileptic. On a lower mental scale than this the epileptic during the interval between his attacks is quite capable of doing useful work, such as gardening or carpentering, and it is those forms of employment which are generally afforded in an epileptic colony. In this country such colonies have been established at Godalming, at Chalfont St. Peter, at Chelford in Cheshire, at Maghull near Liverpool, and one quite recently under the auspices of the London County Council at Ewell. In other countries the most notable one is Craig Colony in the State of New York, but this colony, like that at Chalfont St. Peter, only receives patients who are comparatively sane and free from obvious evidence of cerebral paralysis. The Ewell colony, on the other hand, was established with a view to the reception of the epileptic insane who were formerly under care in the metropolitan asylums. Such patients, although they may be insane, are yet, if free from dangerous delusions and criminal instincts, admirably fitted for farming and industrial colonies. They are capable of being educated, and if set to work in an institution where their special affliction may be cared for their labours may be remunerative to the extent of rendering the institution to a considerable extent self-supporting. On the other hand, if left to find their own living in the world at large they would most probably starve, for their labour, intermittent as it must be, has but a small market value.

We presume that the numerous epileptics referred to by the deputation of the National Council of Women of Victoria include many sane as well as insane, and, moreover, only women and girls are to be treated at first, while all patients are to pay something for maintenance, the sums varying from £2 to 7*s.* 6*d.* per week, so that the proposed Australian colony cannot be intended, for the very poor. But doubtless it is intended to provide for this class in the future. It is a good thing to make a beginning and we hope that the Minister of Lands will not only "see what can be done" but will find that he can do something to meet the desire of the deputation. Of old time lunatics and epileptics were supposed to be under the special protection of the deity, in later times they were taken to be possessed by devils, and even after this notion was exploded they were treated by whipping and imprisonment. It was not until the last decade of the nineteenth century that the epileptic was reckoned as a fit subject for the care of the State. By the establishment of colonies Christian charity and social economy for once go hand in hand, for in such colonies the life of the epileptic is to a great extent freed from a crushing burden, his labour is made profitable, and the State is relieved from the possibility of having to support and deal with him should he degenerate both physically and mentally and become added to the large army of the criminal and degraded.

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The Clinical Causes of Cancer of the Breast.

WE discussed in a leading article last week the two main theories with regard to the etiology of cancer, but there is one aspect of the problem which has hardly yet received the attention that it deserves. Environment and soil, so much talked of in connexion with all evolutionary processes, have not been closely observed in the matter of cancer. In considering the reasons for the appearance of a disease we should not be satisfied merely with finding the actual exciting cause but we should also endeavour to trace out the various conditions which permit the exciting causes to act. No living being, whether plant or animal, can survive unless the surrounding conditions—its environment—will permit it to carry on its vital processes. The soil is as necessary as the seed and when, as is often the case, the seed is very widely scattered the presence or absence of the plant in any area may depend entirely on the suitability of the soil for supporting it. The hyphomyces of ringworm will flourish on the scalp of nearly every child but in very few adults is it able to grow at all. *Yet it must be very common of occurrence.* The same position prevails with many other diseases. The germs on which they depend may be found everywhere, but it is only here and there that a body is found which is suitable for the growth of the germ. For the production of tuberculosis no one will now deny that the presence of the tubercle bacillus is essential. But the tubercle bacillus is almost omnipresent, at least in most large towns, so that the numbers of persons attacked by tuberculosis is incalculably smaller than those who are exposed to the bacillus. Most of us must day after day inhale the tubercle bacillus but no harmful results occur. The seed is planted but it cannot grow [illegible] or it. If the bacillus of [illegible] ng in any and every human [illegible] nigh universal.

Whatever, then, may be the true cause of cancer, whether it be a parasitic microbe or an intracellular "influence," we must all agree that something else is needed to produce malignant disease—at any rate, upon analogy, it is overwhelmingly probable that such is the case. The other necessary conditions are, from one point of view, just as truly causes of the disease as the primo cause for which many are now seeking with tireless energy. Several investigations into these "clinical causes" of cancer have been made from time to time. WALSHE in 1846 published a volume on the nature and treatment of cancer and investigated very thoroughly the predisposing causes. A recent exposition of this aspect of the subject has been written by Mr. O. H. LEAF who has issued a small volume enumerating the conditions under which malignant disease of the breast may occur, and has tabulated his investigations so that some useful statistical conclusions may be drawn. Thus, for instance, we find that in 35 per cent. of the cases there was a definite history of injury and from this the writer concludes that trauma is a common factor in the production of cancer of the breast. There are many conditions mentioned in this volume which are suggested as of etiological importance, but the four chief "clinical causes" are given as errors of lactation, a family history of consumption, injury and anxiety. On the whole the writer concludes that cancer of the breast is almost invariably due to a combination of causes. We are of opinion that such an inquiry as this is work in the right direction, and similar inquiries in respect to cancer in other regions of the body might be instituted with advantage. Mr. LEAF has carried out his work with much care and thoroughness, and we appreciate fully the volume he has produced.

But our commendation and our suggestion that more work in a similar direction should be done by Mr. LEAF or others must not leave the impression that we are ignorant of the risks of the inexpert use of statistics. Few medical men ever have any training in the use of statistics—this is not a subject required for examination and therefore very few of them study it—and yet as a body the members of the medical profession have more to do with statistics than most other professions. The result is that in many articles and in many books written by medical men we find statistics used in a manner which much vitiates the conclusions drawn. We find something of this in Mr. LEAF's book. We may quote an instance. "84 per cent. were married, 16 per cent. unmarried," says Mr. LEAF, and continues, "Cancer of the breast therefore appears more than five times as frequently in the married as in the unmarried." Of course, the conclusion, if its apparent meaning is to be taken, is absolutely unwarranted by the facts presented. From the statement that 84 per cent. were married and 16 per cent. were unmarried the only valid conclusion that can be drawn is that amongst the cases on which Mr. LEAF's statistics are based there were five times as many married as unmarried women. Before we can draw any conclusions as to the relative frequency of cancer of the breast in married and unmarried women we must know the relative frequency of married and unmarried women in the general population. Moreover the relative frequency should be known in the same district from which the patients came and from the same class of the population and between the same ages as the patients who were used for the statistics. It is obvious in every local prison and we echo her wish. In one point we think that she is unduly pessimistic and that is in her expression of opinion that the convict woman is irreclaimable. No one, we believe, is hopelessly irreclaimable, unless insane. Those of our readers who can call to mind Walt Whitman's magnificent poem, "The Singer in the Prison," will know what we mean, although the poet was writing of male prisoners. It is a psychical fact that a woman criminal is far more difficult to reclaim than a man, but nothing is more likely to make a bad character confirmed in bad habits than for reclaiming agencies to plead that nothing can be done for his or her improvement. The Association of Lady Visitors has already done magnificent work in persuading convicts who have expiated their offences to desire a better life and Miss Smith-Rossie may think of Whitman's words:—

> "A soul confined by bars and bands,
> Cries, Help! O help! and wrings her hands;
> Blinded her eyes, bleeding her breast,
> Nor pardon finds, nor balm of rest.
>
> Ceaseless she paces to and fro,
> O heartsick days, O nights of woe!
> Nor hand of friend, nor loving face,
> Nor favour comes, nor word of grace.
>
> It was not I that sinned the sin,
> The ruthless body dragged me in;
> Though long I strove courageously
> The body was too much for me.
>
> Dear prison'd soul, bear up a space,
> For soon or late the certain grace ......"

The way of the released convict is by no means easy but difficult and thankless as the task of helping such may seem the word "irreclaimable" should not be found in the vocabulary of the prison reformer.

THE TEMPLE OF ASKLEPIOS IN THE ISLAND OF COS.

DR. RICHARD CATON and various writers upon antiquarian subjects have acquainted the public of the valuable results achieved a few years ago in the excavation by the Greeks of the celebrated sanctuary of Æsculapius at Epidauros, and M. Cavvadias, the official explorer of that site, in many monographs, and, finally, in a magnificent volume, has presented a complete account of his work and published all the inscriptions and relics found. The great success at Epidauros naturally suggested similar investigations at the other famous seat of medical lore and worship of the ancient Hellenic race, the Asklepeion, or temple of Asklepios, in the island of Cos. Six years ago a German archæologist, Herr Herzog, visited Cos for the purpose, if possible, of ascertaining the situation of the shrine but did not succeed in detecting its position. He, however, made a valuable preliminary survey. In 1900 he again returned to Cos on a mission from the Prussian Academy and the German Archæological Institute. His chief attention this time was given to examining the stones out of which the citadel of Cos, built in the fifteenth century by the Knight Hospitallers, was constructed, for they consist chiefly of the remains of ancient edifices, statue bases, and monumental stelæ, many bearing Greek and Latin epigraphical texts. For Herr Herzog they furnished 20 new and 50 partly known inscriptions but neither these nor others he discovered elsewhere gave him the desired clue to the Asklepeion. In 1902 the indefatigable observer returned once more, accompanied by an architect and a naturalist, Herr Hecht and Herr Vosseler, and commenced excavations in a temple of Demeter at Isthmos and then at an edifice dedicated to Apollo at Halasarua. Still these were not the Asklepeion. The corpus of the inscriptions of Cos had been edited by a British student, Mr. Paton, and in his commentary upon them he had called particular attention to the remains of a magnificent temple near the present village of Kermete. The land had once belonged to the convent of St. John, at Patmos, and in ancient manuscripts relating to that convent the site was called τὸ ἄλσος. Now Mr. Paton noticed ἄλσος was the name of woods which were sacred to Asklepios and suggested to the German searchers to try this site efficiently. The practical Englishman proved more prescient than the erudite Germans, for preliminary explorations speedily proved that the Asklepeion of Cos had been discovered. The great temple stood upon the side of a hill, 100 metres above the blue Ægean Sea, upon a platform from which can be seen Samos to the north, Calymoros to the west, and the Asiatic coast from Mycale to Halicarnassus. The whole of the edifice above ground was of white marble. The foundation of a long base was found which probably supported a pair of statues of Asklepios and Hygeia. Two other temples and a grand altar have been found close to the grand temple. This altar is certainly the one upon which two of the characters in a recently recovered poem of Herondas admired the statues of Asklepios and Hygeia by the son of Praxiteles. The great temple was built in the second century B.C. but its inscriptions range to the third century A.D. Among these texts one refers to a request from Gortyna, in Crete, to send them a medical man. Cos despatched one Hermias who bestowed such care on many Gortynians wounded in a campaign that he merited the honour of a grateful inscription. The school of medicine at Cos was evidently a place from which physicians were obtained. In 1903 Herr Herzog returned to Cos and has made many more discoveries, among others a head of Asklepios and numerous inscriptions. When these are all carefully edited we shall have as complete a record of the great medical college of Hippocrates as we have of the rival school at Epidauros.

COPPER IN PRESERVED PEAS AND BEANS.

FINES of £2 with £2 2*s.* costs and £1 with 2*s.* costs were inflicted by Mr. Marsham at Bow-street Police-court this week upon a wholesale grocer for selling preserved peas which contained 3·402 grains of sulphate of copper per pound and beans which contained 4·067 grains per pound. Medical evidence was given by Mr. A. D. Cowburn, acting medical officer for Holborn, who explained the cumulative effect of repeated doses of sulphate of copper and pointed out that though it might be administered medicinally the maximum dose in such a case would be considerably less than that contained in a pound of peas or beans as sold by the defendant. When only a small amount of copper was used it entered into combination with the chlorophyll forming phyllocyanate of copper. There was no direct evidence that phyllocyanate of copper in minute quantities was injurious to health, although dogs fed on this substance became paralysed, which paralysis ultimately caused death. When copper was used in such large quantities, however, as those stated in the analyst's report the copper entered into combination with the pith or substance of the pea or bean, forming leguminate of copper. He had ascertained from the analyst that leguminate of copper was present in both the articles in respect of which proceedings had been taken. There was a difference of opinion as to whether leguminate of copper was or was not acted upon by the gastric and pancreatic juices. When people, as they frequently did, used butter in cooking peas preserved with copper, complex organic compounds, one of which was oleate of copper, were formed, in which case a much larger quantity of copper was absorbed into the body. That had been proved by experiments carried out for the purposes of the Departmental Committee on Food Preservatives. The defence raised a point of law on the form of the certificate, while otherwise it was to the effect that the defendant had for many years sold similar goods to those on account of which he was prosecuted. The tin of beans had

had on it a label intimating that it contained sulphate of copper, and the tin of peas had, it was stated, borne a similar inscription which had fallen off Questions were put to Mr. Cowburn in cross examination with a view of showing that sulphate of copper, being used medicinally, was therefore harmless, or even beneficial, in vegetables ! It is to be hoped that when this last point is raised, where chemical substances have been introduced into foods as colouring matter or as preservatives, magistrates will remember that when poisonous drugs are employed as medicines they are prescribed for particular purposes by qualified medical practitioners and that the prescriptions are then made up by competent and responsible druggists The addition of such drugs to foodstuffs in order to attract customers is upon a different footing, if only because there is no proof that trustworthy steps have been taken to secure the proper proportion of the dangerous substance, and no more, appearing in a given quantity of the article sold

CHANGES IN THE BLOOD IN MENTAL DISEASE.

A VALUABLE paper on the subject of the leucocytic changes in the blood in various forms of mental disease is contributed to the *Journal of Mental Science* for July by Dr. Lewis C Bruce, medical superintendent of the Perth District Asylum, and Dr A S M. Peebles, assistant physician A systematic examination was made of the blood of 150 patients admitted to the asylum during the past three years Each patient's blood was examined on several (three or more) occasions, often for weeks or months at a time, during the varying course of illness As regards technique Cole's system of counting "fields" was employed in the blood examinations to determine the frequency of the leucocytes The Thoma Zeiss hæmocytometer was employed and no less than 30 fields, and frequently more, were counted at each enumeration when accuracy was desired The specimens were coloured with Louis Jenner's stain In the differential countings the following five varieties of leucocytes were recognised—viz , polymorphonuclear leucocytes, small and large lymphocytes, eosinophile leucocytes, and mast cells For purposes of comparison numerous control counts were also made from the blood of members of the asylum staff In these control cases the leucocytes were found to be from 6000 to 9000 per cubic millimetre of blood in young healthy males and from 6000 to 13,000 in females The average percentages of the different kinds of cells were as follows polymorphonuclear cells 70 per cent , small lymphocytes 20 per cent , large lymphocytes 8 per cent , and eosinophile cells 1 5 per cent in the males, the corresponding figures for females being 60, 30, 7 5, and 2 per cent Mast cells says Dr Bruce, occasionally occurred and a percentage of from ½ to 1 was met with in the control specimens of blood The following were the general results obtained in this investigation, the details in each of the individual cases of disease conforming in general to the average results obtained for each class In cases of pure acute melancholia leucocytosis was never observed to be present The leucocytes varied from 7000 to 13,000 per cubic millimetre, the polymorphonuclear cells from 55 to 70 per cent , the small lymphocytes from 30 to 40 per cent., and the large lymphocytes from 5 to 10 per cent The eosinophile cells never exceeded 1 per cent and in a few cases an occasional mast cell was seen A useful practical inference is drawn here In examining an early case of melancholia which has not yet fully developed, says Dr Bruce, "the prognosis should be guarded if hyperleucocytosis is present and especially if the polymorphonuclear percentage is above 70 On the other hand, if the leucocytosis is below 10,000 the prognosis is good for the melancholia " In cases of excited melancholia examination showed a high leucocytosis early in the disease, and coinciding with this the percentage of polymorphonuclear cells was frequently above 70 Later in the disease during relapses and recurrences a high leucocytosis (20,000 to 30,000 per cubic millimetre) and a high polynuclear cell percentage (80 per cent) frequently prevailed Before the onset of the relapse both percentages were low, the rising numbers of leucocytes and polymorphonuclear cells being associated with the exacerbation of the illness Cases of mental excitement which on further examination turned out to be "*folie circulaire*" often might, adds Dr Bruce, be mistaken for simple acute mania All such cases when examined showed depression or excitement of the simple melancholic or maniacal type During the stage of depression all these cases exhibited a high leucocytosis with a polymorphonuclear percentage of from 60 to 70 When apparent recovery followed the leucocytosis still remained high, and when excitement set in the leucocytosis gradually increased, reaching its height at the acme of the mental disturbance and then gradually falling to a lower level The depression and excitement of cases of "*folie circulaire*" are quite different from ordinary attacks of mania and melancholia The leucocytosis of acute continuous mania and of recurrent mania in adolescents exactly resembles that of excited melancholia and a notable feature in all three conditions was its persistency. Leucocytosis remained for months, and even in some cases for years, after the patient's recovery and discharge from the asylum In cases of recurrent mania (not including alcoholism) the leucocytosis rose high during the attack and fell slightly afterwards but rarely reached the normal The polymorphonuclear percentages followed the curve of leucocytosis Between the excitement periods of recurrent mania the large lymphocytes and hyaline cells of the blood were much increased, often reaching 20 per cent In alcoholic acute mania the blood changes were identical with those of non alcoholic acute continuous mania, which suggested to the authors of the investigation that "alcohol was an exciting cause, breaking down the resistive power of a patient predisposed by heredity to the infection which occurred in melancholia " Chronic alcoholic cases (delusional type) never exhibited any leucocytosis. All cases of paranoia and of delusional insanity occurring in later life were entirely free from hyperleucocytosis In classical cases of general paralysis there were hyperleucocytosis and a high polynuclear percentage at the onset, with marked remission of symptoms if the leucocytosis had been very *high during* the attack During the second stage of general paralysis the leucocytosis followed the course of the disease, febrile attacks being heralded by rise of the percentage of both polymorphonuclear cells and small lymphocytes Transient [illegible] during the seizures and in the intervals, the most marked increase of cells following a series of fits (status epilepticus) No cells exhibiting any evidences of phagocytosis were ever found in any of the cases of insanity examined

THE MEMORIAL TO SIR THOMAS BROWNE

IN THE LANCET of May 27th, 1899, we published a letter from Sir Peter Eade, the chairman of a committee appointed to organise the raising of a statue to be erected in Norwich to Sir Thomas Browne As will be seen by a letter which appears in another column from Mr F R Eaton, the honorary secretary of the fund, the preliminary arrangements for the statue are now complete and Mr Henry Pegram has been commissioned to carry out the work Sir Thomas Browne was one of the most famous citizens of Norwich, which he made his home, although he was not, strictly speaking, a native [illegible]astern.

capital. He was born in London and received his medical education in Winchester, but his name and fame are so intimately connected with Norwich that it is but fitting that his memorial should be erected there. No words from us are necessary in praise of a man whose writings are known throughout the English-speaking world, and the "Religio Medici" and still more his treatise on Urn Burial will remain as a possession for ever to all who can admire writing of a style which is at once philosophical, musical, and endued with that spirit of quietism which throughout the troublous times of the seventeenth century distinguished such men as Browne, Henry Vaughan, and George Herbert. The site suggested for the statue is in the Haymarket, near the house in which Browne resided for many years and the church of S. Peter Mancroft in which he was buried.

CHRONIC INTERSTITIAL NEPHRITIS IN THE YOUNG.

Chronic interstitial nephritis is very rare in the young. Ashby and Wright, in their text-book on "Diseases of Children," state that five cases have come under their observation—three cases in girls (aged respectively 11, ten, and seven years) and two cases in boys (aged respectively five and two years). In all the cases the diagnosis was verified by a necropsy. In the *American Journal of the Medical Sciences* for June Professor J. L. Hirsh has reported two cases, both associated with changes in the blood-vessels though of an entirely different nature. In the first case a boy, aged 15 years, was taken to hospital for uncontrollable bleeding from the gums following the extraction of a tooth on the previous day. He had been a robust child and had had measles at the age of six and varicella at the age of eight years. About a year before admission he began to complain of feeling tired after slight exertion, his appetite began to fail, and his sleep became restless. He got up at night to micturate. Of late he had had headache at irregular intervals. He had never suffered from hæmorrhage previously and there were no bleeders in his family. On admission he was pale, the mucous membranes were almost colourless, and he complained of dyspnœa. There was visible pulsation of the carotids. A slight râle was occasionally heard at the bases of the lungs. The apex beat was prominent and in the fifth space just outside the nipple line. The area of cardiac dulness was increased both towards the right and the left. There was a soft apical systolic murmur and the second aortic sound was accentuated. The radial pulse was full, of moderate tension, and, though compressible, was obliterated with some difficulty. The liver extended a finger's breadth below the costal margin. The urine was increased in quantity, pale, and of specific gravity 1012. It contained a little albumin and a few hyaline casts and an occasional granular cast. At times albumin was absent. Continuous pressure stopped the hæmorrhage in a few hours. After resting in bed for a few days his condition seemed to improve but after he had been up for a week œdema of the ankles was observed. The dyspnœa increased and he died five weeks after admission. At the necropsy about 200 cubic centimetres of serous fluid were found in each pleural cavity. The lungs were congested and œdematous. The heart was enlarged, principally from hypertrophy of the left ventricle, which was two centimetres in thickness. The left kidney weighed only 68 grammes and the right 80 grammes. Both were granular. The aorta was atheromatous and showed calcareous plates and spots of fatty degeneration. Microscopic examination of the kidneys revealed great increase of connective tissue, destruction of glomeruli, and degeneration of the tubes. In the second case a girl, aged 18 years, was admitted to hospital on July 12th, 1903, complaining of frequency of, and loss of control over, micturition. The symptoms began two years before. She was anæmic and her development corresponded to that of a girl aged 14 years. Moist râles were heard over both lungs. The cardiac dulness was increased and the apex beat was one centimetre outside the nipple line. The aortic second sound was accentuated. The urine was increased in quantity, pale, and of specific gravity 1010. It contained a few hyaline casts and a little albumin. The lower limbs were œdematous. On July 25th she began to complain of headache and became dull and two days later comatose. She died on the 28th. The necropsy showed an enlarged heart. The kidneys were very small and granular. The aorta was abnormally small and admitted the little finger with difficulty. A relation between congenital narrowness of the aorta and primary atrophy of kidney has been described by Lanceraux and others. The etiology of granular kidney in the young is obscure. It has been described as congenital and congenital syphilis has been supposed to play an important rôle in its production. Heredity seems to be a factor, as in the remarkable case cited by Dr. Howship Dickinson in which Bright's disease appeared in four generations.

THE ALCOHOL HABIT AND THE AUTOMATIC MACHINE.

Not long ago considerable publicity was given to the fact that certain sweets contained a decided quantity of alcohol, but this is not the only surreptitious way of imbibing the spirit, as would appear from a method of which a correspondent informs us he has been recently an eye-witness. It is well known that strong spirit is an indispensable solvent for essential oils in the preparation of perfumes. Their alcoholic strength, of course, varies, but we should be well within the mark we think if we suggest that, generally speaking, perfumes are stronger than brandy. Such is the depraved state of human nature even in its early stages that the automatic penny-in-the-slot machine has been found by small boys to be a source of free "nips." There are automatic machines designed for supplying a sprinkling of scent for the handkerchief for the sum of one penny. A handkerchief is placed upon a metal cup above which is a delivery tube or spout. On putting a penny in the slot a small quantity of perfume is discharged from the spout and scattered on the handkerchief. Certain ingenious little urchins, it appears, have not been long in discovering that what costs the customer the sum of one penny for the luxury of having a handkerchief scented may be obtained free by applying a partial vacuum at the end of the spout, otherwise by the eminently simple means of sucking. The fact that sucking anything, nice or nasty, wholesome or insanitary, is a perfectly natural habit in the young would discount any claim on the part of these wicked boys to a particularly original design. The spout was clearly meant to deliver something and it was but an instinctive thought to see if something could be got out of it. The experiment was a success and we need hardly dwell upon the evil possibilities of the urchins' discovery. We trust, and do not doubt, that the companies who own these machines will take preventive steps.

The medical officer of health of the Cape Colony reports that the state of the colony for the week ending July 23rd as regards plague was as follows. At Port Elizabeth three cases of plague were discovered during the week; 202 rats and 171 mice were bacteriologically examined during the week, and of these 12 rats and nine mice proved to be infected with plague. At East London the carcass of a rat discovered on July 21st was considered on microscopical examination to be probably plague-infected and inoculation experiments are being carried out to test this view. In the Harbour Board area and the Cape Town municipal area 553 rodents were examined but none was found to be plague-infected.

THE King of Greece has conferred the Gold Cross of the Royal Order of the Saviour upon Sir William Bennett, K.C.V.O., F.R.C.S.

THE REPORT OF THE PRIVY COUNCIL UPON PHYSICAL DETERIORATION.

(Continued from p. 502.)

HAVING discussed in the earlier portion of its report the value of the evidence presented by the War Office, and having satisfied itself of the failure of the data officially relied on to prove general physical deterioration, the committee comments with justice, and evidently with surprise, on the absence of any criteria, statistical or otherwise, by which a comparative estimate of the health and physique of the community may be arrived at. Accordingly, in compliance with the terms of its reference, the committee addressed itself at an early date to the task of supplying this pressing want for future use. It has accordingly devised a plan by means of which information as to certain broad facts regarding measurement, health, and physique may in course of time become available for State purposes. In order that this plan should bear the stamp of scientific authority the committee invited the assistance and counsel of the English Royal Colleges of Physicians and Surgeons, as well as that of the leading anatomists, anthropologists, and other scientific men whose advice was likely to prove useful. The labours of the committee in this direction have resulted in a scheme which is fully set forth in the report and to this we shall recur later.

In commenting on the evidence of many competent witnesses the committee refers to the practically unanimous testimony received as to the improving conditions under which the denizens of our large towns are now called upon to exist. Rookeries are being dispersed, inclosed yards opened out, cellar dwellings and back-to-back houses are disappearing, and, speaking generally, daylight and fresh air are being admitted into slum property from which the avarice of the land-grabber and the jerrybuilder had excluded both these essentials of healthy life. Concurrently with an increase of wages a fall in the price of most of the necessaries of life has taken place, more than counterbalancing the rise of rent which in itself is largely due to the higher wages now paid in the building trades. In this connexion the valuable evidence of Mr. C. S. Loch, Secretary of the Charity Organisation Society, is especially referred to. He furnished the committee with reasons for believing that improved resources have been accompanied by an upward movement in social ability and competence, with the result that a certain amount of advantageous expenditure has gone in better dwelling-places and in the purchase of better and more plentiful food. From other witnesses, too, the committee learns that in various directions the conditions of life among the labouring classes have been improved. For example, a better and more abundant water supply has been in many cases secured, the housing of the working classes has been the subject of legislative concern, pauperism, especially among the young, has diminished, better and more complete hospital accommodation has been provided for the sick poor, the conditions of labour touching young persons and women in factories and workshops have been greatly ameliorated, and all the "children of the State" in workhouses, schools, reformatories, and industrial institutions are started in life under more fortunate auspices than formerly. In short, the mass of evidence which the committee has received is practically conclusive as to the non-existence of any general or progressive deterioration either in the physique or in the health of the British nation. On this point we may quote from the report the deliberate judgment of the committee. "*It may be as well to state at once that the impressions gathered from the great majority of the witnesses examined do not support the belief that there is any general progressive physical deterioration.*"

The first volume of the evidence on which this important judgment is founded was published last week, and from such a perusal of it as has been practicable in a few days we believe that our readers will agree with the verdict which, after long and painstaking inquiry, the committee has pronounced. There is, however, on the other hand, a dark side to this picture, and this the committee has not failed to recognise and to deplore. Without question there still exists in London as well as in other large British towns a considerable aggregate of slum population, ill-nourished, disheartened, poor, ignorant, badly housed, miserably clad, and, indeed, hardly amenable to social improvement. In the absence of trustworthy data the committee expresses no opinion as to their number, but it speaks of these slum dwellers as the "degenerates." These are the luckless denizens of our large towns and the prominent notice now directed to the physical condition and environment of the lower classes is responsible for the notoriety they now enjoy. Physical infirmity is practically limited to the poorest and lowest strata of the population, whose children are improperly fed and inadequately lodged, and in which the parents of both sexes are idle, improvident, and intemperate. With reference to these wretched persons the committee observes that in large classes of the community there has not been developed a desire for improvement commensurate with the opportunities offered to them. Laziness, want of thrift, ignorance of household management, and particularly of the choice and preparation of food, on the one hand, and, on the other, filthiness, indifference to parental obligations, and drunkenness largely affect adults of both sexes and press with terrible severity upon their offspring. "The people perish for lack of knowledge." Local authorities, moreover, especially in country districts, are often reluctant to exercise their powers, and in these circumstances sanitary progress, lacking the stimulus of a healthy public conscience, is tardy and uncertain.

Foremost among the many causes in operation that are calculated to arrest and depress development is the massing of the population in great towns—the "urbanisation of the people." The recent census returns tell us that the urban portion of the population of England and Wales now equals nearly four-fifths of the whole, whereas 50 years ago it was little more than half, and further, that for every person who in the year 1851 lived in a town about three persons are town dwellers at the present time. It must, however, be borne in mind that the meaning of the term "urban" is frequently misunderstood; the term does not mean more than that the area to which it applies has, for purposes of local government, an urban organisation. As a matter of fact, a large portion of the dwellers in so called urban districts are now living under conditions as healthful as any that obtain in rural districts. Owing to the greater completeness of sanitary legislation and the higher conception of duty that governs their administration these urban areas enjoy advantages that are denied to the rural, and it is a fact that towns have at the present day a death-rate which compares favourably with that of country districts half a century ago.

Prominent among the results of urbanisation stands overcrowding, with its attendant evils of uncleanliness, foul air, and bad sanitation. Overcrowding, says Mr. Charles Booth, is the great cause of degeneracy. Drink is fostered by bad houses. Crowded homes send men to the public-house and are the main cause of drink and vice. Unfortunately, the permanent difficulty in the way of improvement lies in the character of the people themselves—their feebleness and indifference, their reluctance to move, and their incapability of moving. These are the real obstacles that beset even well-disposed local authorities in their endeavours to ameliorate the conditions of life in our great towns. The evils of overcrowding are of course most obvious in [illegible] he overcrowding t[illegible] e lowest type, stee[illegible] cynically indifferent [illegible] by their filthy habits and to the moral pollution of the young brought up in such an atmosphere. In Glasgow the general death-rate in single-roomed tenements is just twice that of the whole city, whilst the mortality from pulmonary tuberculosis is more than three times [illegible] houses. In Finsbury, [illegible] cent census, no less than [illegible] tenements, the death-rate at all ages was 39 per 1000 living, notwithstanding that in the same borough the rate among occupants of four-, or more, roomed tenements was less than 6 per 1000. In seven groups of districts in the administrative county of London the mortality among infants closely follows the degree of overcrowding. In other words, in districts where the proportion of single-roomed tenements does not exceed 10 per cent. of the whole the infantile death-rate is 146 per 1000, but as the proportion of the people living in overcrowded tenements increases so does also the infantile death-rate, ranging from 180 per 1000 in some districts through 196 and 210 per 1000 and culminating in the most crowded districts in a rate of 223. We thus see that in the districts last mentioned out of every four children born one dies before reaching its first birthday, and with all due respect for the War Office authorities we would remark that this fact is of far greater national importance than is the other fact that three out of five slum-dwellers recruited for the army are eventually found unfit to remain with the colours.

In so far as the evils of overcrowding depend upon structural defects of slum property the committee holds that they are gradually removeable by the firm application of existing statutory powers. The fact, however, is established by the evidence of many witnesses that much of the insanitary property is in the hands of persons who, as members of the sanitary authority, are called upon to put the law in operation. Recognising the paralysing effect of this circumstance the committee approves of the suggestions of Colonel Lamb of the Salvation Army to the effect that in all cases involving the amelioration of slum property justice should be administered not as at present but by a stipendiary magistrate. With regard to the incorrigibles, the habitual vagrants and so-called "won't works," the committee thinks that the system of "labour colonies" as now carried out by the Salvation Army at Hadleigh might be worthy of a fair trial. The committee paid a visit to this colony and was much impressed with the order and excellent management which pervaded every branch of its administration and by the opportunity the system there in operation on a large scale appears to offer for the reclamation of the waste elements of society. Having regard to the desirability of preserving the young from contaminating influences it might be possible to apply similar treatment to the children of all parents who have proved unfit to discharge their obligations to those whom they bring into the world. With a view to the enforcement of parental responsibility the object would be to make the parent the debtor to society on account of his child, with the further liability in default of payment for suitable maintenance of being placed in a labour colony under State supervision until the debt is discharged. It is not believed that such extreme measures would be necessary in a large number of cases; the fact that a few defaulters had been so treated and that the State had the necessary power would exercise a salutary effect and might be expected to prove to the young a charter of immunity from the worst of the evils by which they are at present oppressed. According to the evidence, the Staffordshire Potteries appear to suffer exceptionally from the neglect of local authorities to deal with glaring offences against sanitary law. Thus one witness said, "I should think that the local authorities in the Potteries were as inefficient as you could find anywhere." Most of the bad houses are owned by members of the local bodies and the sanitary inspectors are too much in awe of their employers to carry out their duty. For this state of affairs the remedy is obvious and is one which the committee approves. It consists in applying to the chief administrative officer of each local authority the principle carried out in London to the benefit of all concerned—namely, that of granting to the medical officer of health secure tenure of office provided that he satisfies the Local Government Board as to the manner in which his duties are performed and that he devotes his whole time to sanitary work.

Among other alleged causes of physical deterioration associated with aggregation of the people in towns is the withdrawal from the rural districts of the best and choicest of the population, leaving weaker and inferior types to continue the stock. This evil is sometimes aggravated by the drifting into the country of the debilitated town population which is crowded out by the inrush of more vigorous elements. Evidence given before the Scotch Royal Commission on Training suggests that the physique of the population of the home counties had suffered by the outflow of debilitated types from the metropolitan area. Moreover, Mr. Tweedy, the President of the Royal College of Surgeons of England, in the course of his remarks on the migration of the stronger types into the towns, expressed the opinion that a reverse process was going on; that there is a current of the better and more adventurous people into the towns and also a similar reverse current of the feebler and less fit who are driven back again to the land, the rural districts thus becoming at once the recruiting ground and the asylum of the towns. This aspect of the question has especial interest for Ireland. The witnesses from that country were emphatic in ascribing to emigration fatal effects upon the physique of the people by withdrawal of the strongest and best types, thus leaving it to the weakest types to reproduce their kind and carry on the race. The sound and the healthy—the young men and young women—from the rural districts emigrate to America and other lands in great numbers and, as a rule, it is only the more enterprising and more active that go. By the combined operation of these causes the flower of the rural population is depleted and an undue proportion of weaklings constitutes the stock from which the population of Ireland is recruited. The committee proceeds to consider the alleged tendency of the superior stocks in all classes of the people towards a *diminished rate of reproduction as one of the possible causes* of physical deterioration. So far as this allegation is based upon a diminishing birth-rate—a fact general throughout Western Europe—there appear, in the committee's judgment, to be certain compensatory considerations. Among the factors in the reduced birth-rate in England are: (1) the raising of the ages at which marriages are contracted; and (2) a diminution in the number of illegitimate births. Both these circumstances are believed by the committee to tend to the improvement rather than to the deterioration of the race.

(To be concluded.)

METROPOLITAN HOSPITAL SUNDAY FUND.

THE following are the awards recommended by the committee of distribution for the year 1904:—

GENERAL HOSPITALS.

Charing Cross Hospital, £987 1s. 8d; French Hospital, £325 16s. 8d.; German Hospital, £565 8s. 4d.; Great Northern Central Hospital, £1030 4s. 2d.; Guy's Hospital, £2041 5s.; Hampstead General Hospital, £204 2s. 6d.; Italian Hospital, £182 1s. 8d.; King's College Hospital, £1458 11s. 8d.; London Hospital, £4992 18s. 4d.; London Homœopathic Hospital, £533 15s. 10d.; Phillip's Memorial Homœopathic Hospital, £23 [illegible] Hospital, £798 11s. 8d.; Metropolitan Hos[illegible]spital, £282 14s. 2d.; Miller Hospital and [illegible] 6 16s. 8d.; North-West London Hospital, £505 0s. 10d.; Poplar Hospital, £661 5s. 0d.; Queen's Jubilee Hospital, £153 6s. 8d.; Royal Free Hospital, £1341 13s. 4d.; St. George's Hospital, £1620 3s. 4d.; SS. John and Elizabeth Hospital, £327 15s.; St. Mary's Hospital, £2395 16s. 8d.; Seamen's Hospital Society, £1386 14s. 2d.; Middlesex Hospital and Convalescent Home, £2501 5s.; Tottenham Hospital, £445 12s. 6d.; University College Hospital, £1760 9s. 2d.; Walthamstow, &c., *Hospital*, £105 8s. 4d.; West Ham Hospital, £531 17s. 6d.; West London Hospital, £1015 16s. 8d.; Westminster Hospital, £1533 6s. 8d.; and St. John's Hospital, Lewisham, £191 13s. 4d.

CHEST HOSPITALS.

City of London Hospital for Diseases of the Chest, Victoria Park, £929 11s. 8d.; *Hospital for Consumption, Brompton*, £1820 16s. 8d.; Mount Vernon Consumption Hospital, Hampstead, £766 13s. 4d.; Royal Hospital for Diseases of the Chest, City-road, £431 5s.; and Royal National Hospital for Consumption, Ventnor, £335 8s. 4d.

CHILDREN'S HOSPITALS.

Alexandra Hospital for Hip Disease, W.C., £297 1s. 8d.; Banstead Surgical Home, £23 19s. 2d.; Barnet Home Hospital, £43 2s. 6d.; Belgrave Hospital for Children, S.W., £76 13s. 4d.; Cheyne Hospital for Incurable Children, S.W., £138 19s. 2d.; East London Hospital for Children, Shadwell, E., £805; Evelina Hospital for Sick Children, Southwark, S.E., £95 16s. 8d.; Home for Incurable Children, Maida-vale, W., £71 17s. 6d.; Home for Sick Children, Sydenham, S.E., £129 7s. 6d.; Hospital for Sick Children, Great Ormond-street, W.C., £1102 1s. 8d.; Kensington, for Children, and Dispensary, £81 9s. 2d.; North-Eastern Hospital for Children, Hackney-road, N.E., £431 5s.; Paddington-green Hospital for Children, W., £306 13s. 4d.; St. Mary's Hospital, Plaistow, E., £258 15s.; St. Monica's Hospital, Brondesbury, N.W., £67 1s. 8d.; Victoria Hospital for Children, King's-road, Chelsea, S.W., £527 1s. 8d.; Victoria Home, Margate, £40 5s.; and Hospital for Hip Disease, Sevenoaks, £43 2s. 6d.

LYING-IN HOSPITALS.

British Lying-in Hospital, Endell-street, W.C., £43 2s. 6d.; *City of London Lying-in Hospital*, City-road, E.C., £100; *Clapham Maternity Hospital*, £19 5s. 4d.; *East End Mothers'* Home, £67 1s. 8d.; General Lying-in Hospital, Lambeth, S.E., £59 8s. 4d.; and Queen Charlotte's Lying-in Hospital, Marylebone-road, W., £450 8s. 4d.

HOSPITALS FOR WOMEN.

[illegible] n, S.W., £273 2s. 6d.; Hospital for [illegible] 7, 15s.; Grosvenor Hospital for Women [illegible] S.W., £143 15s.; New Hospital for [illegible] £287 10s.; Royal Waterloo Hospital for Children and Women, Lambeth, S.E., £191 13s. 4d.; and Samaritan Free Hospital, Marylebone-road, W., £335 8s. 4d.

OTHER SPECIAL HOSPITALS.

[illegible] Frith street, W., £22 0s. 10d.; Royal Dental Hospital of London, W C., £213 14s. 2d.; and National Dental Hospital, 149, Great Portland-street, W., £30 13s. 4d.

CONVALESCENT HOSPITALS.

[illegible] oor Children, £20 2s 6d., St. Michael's Convale [illegible] 33 10s. 10d.; Seaside Convalescent Hospital, Seaford, £95 16s. 8d.; and Richmond House, Worthing, £19 3s. 4d.

COTTAGE HOSPITALS.

[illegible] am Cottage Hospital, [illegible] Hospital, £91 0s. 10d., [illegible] y Heath Cottage Hos- [illegible] Hospital, £59 8s. 4d.; [illegible] ospital, £57 10s.; Cold- [illegible] Hospital, £47 18s. 4d.; [illegible] n and Ewell Cottage [illegible] £43 2s 6d., Kingston [illegible] ge Hospital, Dartford, [illegible] 3s. 4d.; Reigate and [illegible] up Cottage Hospital, [illegible] Hospital, £38 6s. 8d.; [illegible] mbledon Cottage Hos- [illegible] Hospital, £38 6s. 8d.; [illegible] £47 13s. 4d.

INSTITUTIONS.

[illegible] House, Pembridge square, W., £95 16s. 8d.

DISPENSARIES.

[illegible] £55 11s. 8d.; Forest-hill Provi [illegible] Provident Dispensary, £31 12 [illegible] £15 6s. 8d.; Hampstead Provident Dispensary, £52 14s. 2d.; Holloway [illegible] chapel Provident Dispensary, £35 9s. 2d.; and Woolwich Provident Dispensary, £22 0s 10d

MEDICINE AND THE LAW.

Niall v. Tredgold.

AT both the summer and winter meetings of the General Medical Council of last year the case of Dr. William George Niall was heard *in camerâ*, with the result, it may be remembered, that the Council found the charges brought against him to be without foundation. This completed the case as far as the jurisdiction of the Medical Council was concerned, but circumstances have since arisen calling public attention to the matter. The case of Niall *v.* Tredgold, heard before Mr. Justice Joyce in chambers in the Chancery Division a few days back, was the direct outcome of the proceedings before the General Medical Council and possessed certain features of interest to medical men generally. The story told very briefly is as follows. Dr. Niall took Mr. A. F. Tredgold into partnership in 1901, but early in the year 1903 Mr. Tredgold informed him that unless he agreed to a dissolution of the partnership, a return of £230 of the purchase money, and undertook not to reside or have a surgery or place of call within a mile of his former residence a complaint of professional misconduct would be made against him to the General Medical Council. Dr. Niall denied that there were any grounds for such imputations, demanded names and full particulars, and protested against the indignity of having his name dragged before the Council. He also, not unshrewdly, suggested that a deed of dissolution should be drawn up on the terms verbally demanded from him. This was actually done and Dr. Niall, in possession of the draft deed, declined to complete the negotiations for a dissolution until "all imputations were withdrawn or made in such a manner that they could be threshed out." In reply to this Mr. Tredgold appears to have given seven days' notice of dissolution of the partnership and further to have replied that if the matter was settled quietly no names need be mentioned, but unless he had a reply agreeing to the terms by eight o'clock that evening he would proceed to the Council. The case came before the Council, as we have said, in May, 1903, when it was notified to Dr. Niall that the Medical Defence Union would conduct the prosecution. The case was first heard *in camerâ* in May and adjourned on the application of counsel for the defence until November for the production of rebutting evidence, when by the unanimous finding of the Council it was decided that the allegations against Dr. [illegible] false.

[illegible] don and Counties Medical Protection Society took [illegible] Dr. Niall's interests. On June 7th, 1904, a writ [illegible] d by the Society's solicitor on Mr. Tredgold as [illegible], Dr. Niall's claim being for: (*a*) A declaration [illegible] notice of Feb. 9th, 1903, purporting to terminate the partnership then existing between plaintiff and defendant by virtue of articles of partnership dated Sept. 25th, 1901, is not effective or binding on the plaintiff and that the said partnership now exists; (*b*) dissolution of said partnership; (*c*) all necessary and proper accounts; and (*d*) costs. Mr. Justice Joyce adjudged that the partnership ought to be dissolved as from the date of this judgment, June 30th, 1904—i.e., he gave Dr. Niall what he asked for.

This is a case of considerable interest. Firstly, it illustrates the inconvenience of the existence of rival medical defence associations. If the secretary of the Medical Defence Union had known the answers forthcoming to the charges brought against Dr. Niall, as well as those charges, he could have advised Mr. Tredgold not to adopt an extreme and, as events have shown, misdirected course. If Mr. Tredgold had placed his interests in the hands of the London and Counties Medical Protection Association that society could have told him the error that he was making. Secondly, it shows the weakness of the General Medical Council as a quasi-legal tribunal. The *whole matter ought to have* been *dealt* with privately by arbitration. The hearing by the Council *in camerâ* of charges of disreputable conduct against a practitioner is a gravely inconvenient method of procedure, if only because of the fact that the proceedings instituted cannot be kept private. And when the hearing has to be protracted throughout a year the position of the accused man becomes an intolerable one. If arbitration cannot be arranged it is better that prompt and open legal proceedings be taken. The action of the General Medical Council will follow automatically upon the verdict.

Public Health and Poor Law.

LOCAL GOVERNMENT BOARD.

ANNUAL REPORTS OF MEDICAL OFFICERS OF HEALTH.

County Borough of Halifax.—Dr. J. T. Neech suggests when dealing with the subject of the spread of small-pox by tramps that power should be obtained to arrest the movements of these persons for 14 days or so. He thinks that this power should be bestowed upon the Local Government Board, which central authority should be enabled to declare a given area an "infected area" much in the same way as is now the case with the Board of Agriculture under the Contagious Diseases (Animals) Act. In the event of the Local Government Board declaring any given area to be an "infected area" all common lodging-houses and tramp wards would be placed in quarantine. How much simpler it would be to have compulsory revaccination as is the case in Germany. In discussing scarlet fever Dr. Neech refers to a little outbreak of seven cases of that disease in which each patient obtained milk from a certain farm. No trace of scarlet fever could be discovered at the farm but on examining the cows it was found that in the case of one the udder was diseased and that serous fluid and pus could be expressed therefrom. The secretion was examined but nothing resembling the streptococcus of scarlet fever could be isolated. There seem also to have been several cases of sore-throat and enlarged glands in connexion with this milk-supply. The facts available are not, however, sufficiently precise to enable a causal connexion between the milk and the scarlet fever and sore-throat prevalence to be made out. The large number of deaths from measles which occur in children aged from one to five years has led Dr. Neech to suggest that children should not be allowed to attend school before five years of age. He points out that the Education Acts do not require such attendance and that it would not be a great advance on this position to refuse such children admission altogether. There are many persons who will agree with this proposal.

City of Coventry.—Dr. E. H. Snell points out in his annual report that if the decline in the death-rate from pulmonary tuberculosis which has been going on for the last 60 years continues it may be anticipated that the disease will have become extinct before the middle of the present century. Although this may be perhaps a somewhat Utopian idea Dr. Snell's words on the subject of tuberculosis are well worth quoting as an illustration of the views of some of our more thoughtful medical officers of health. He says: "There is no doubt that the neglect of the first principles of hygiene, embodied in the words light, ventilation, and cleanliness, and all which they connote, have more influence over the occurrence of this disease that has hitherto been imagined. The application of these to its cure, as in the open-air treatment, is of infinitely less consequence than their application to the prevention of the disease. When all houses are properly lighted and properly ventilated by windows and doors that are opened the chances of the propagation of tuberculosis will indeed be small." It is important, Dr. Snell adds, to have regard to these general principles and not to become engrossed too fully in "details such as disinfection, the prevention of spitting, the consumption of tuberculous meat and tuberculous milk, and the isolation of the phthisical, which, however important they may be, can never by themselves be expected to eradicate the disease."

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 9277 births and 6482 deaths were registered during the week ending August 13th. The annual rate of mortality in these towns, which had been 14·1, 16·4, and 19·8 per 1000 in the three preceding weeks, further rose last week to 22·1 per 1000. In London the death-rate was 21·4 per 1000, while it averaged 22·4 per 1000 in the 75 other large towns. The lowest death-rates in these towns were 6·8 in South Shields, 9·0 in Hornsey, 10·2 in Hastings and in King's Norton, 10·4 in Devonport, 10·5 in West Hartlepool, 10·7 in Blackburn and in Halifax, and 11·3 in Coventry; while the highest rates were 31·2 in Birmingham, 32·4 in Aston Manor, 33·0 in East Ham, 34·6 in York, 35·5 in Bootle, 35·7 in Wigan, 36·7 in Leyton, and 37·7 in Liverpool. The 6482 deaths in these towns last week included 2710 which were referred to the principal infectious diseases, against 793, 1255, and 2059 in the three preceding weeks; of these 2710 deaths, 2423 resulted from diarrhœa, 122 from measles, 74 from whooping-cough, 47 from diphtheria, 28 from scarlet fever, 13 from "fever" (principally enteric), and three from small-pox. No death from any of these diseases was recorded last week in Hastings, Bournemouth, or South Shields; among the other towns they caused the lowest death-rates in Devonport, King's Norton, Blackburn, Stockton-on-Tees, West Hartlepool, and Tynemouth; and the highest rates in West Ham, East Ham, Leyton, Walthamstow, Aston Manor, Liverpool, Bootle, York, and Hull. The greatest proportional mortality from measles occurred in Brighton, Stockport, Bootle, Salford, and Hull; from whooping cough in Burton-on-Trent, Bootle, Huddersfield, and Rhondda; and from diarrhœa in West Ham, East Ham, Leyton, Walthamstow, Birmingham, Aston Manor, Liverpool, Bootle, Burnley, York, and Hull. One fatal case of small-pox was registered in London, one in Coventry, and one in Stockport, but none in any other of the 76 large towns. The number of small-pox patients in the Metropolitan Asylums hospitals, which had been 51, 46, and 32 at the end of the three preceding weeks, had further declined to 21 at the end of last week; no new case was admitted during the week, the numbers in the three preceding weeks having been six, seven, and two. The number of scarlet fever cases in these hospitals and in the London Fever Hospital on Saturday last, August 13th, was 1763, against 1754, 1784, and 1758 on the three preceding Saturdays; 189 new cases were admitted during the week, against 234, 243, and 166 in the three preceding weeks. The deaths in London referred to pneumonia and diseases of the respiratory system, which had been 120, 118, and 112 in the three preceding weeks, rose again last week to 121, but were slightly below the number in the corresponding period of last year. The causes of 51, or 0·8 per cent., of the deaths in the 76 towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in West Ham, Nottingham, Salford, Bradford, Hull, and in 51 other smaller towns; the largest proportions of uncertified deaths were registered in Ipswich, Birmingham, Smethwick, Liverpool, St. Helens, Manchester, Middlesbrough, and Sunderland.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been 14·1, 14·1 and 14·6 per 1000 in the three preceding weeks, further increased to 15·7 per 1000 during the week ending August 13th, but was 6·4 per 1000 below the mean rate during the same period in the 76 large English towns. The rates in the eight Scotch towns ranged from 8·1 in Paisley and 12·3 in Perth, to 15·6 in

Aberdeen and 17 4 in Glasgow The 519 deaths in these towns included 68 from diarrhœa, 26 from whooping cough, six from measles, five from diphtheria, two from scarlet fever and two from "fever," but not any from small pox In all, 109 deaths resulted from these principal infectious diseases last week, against 68, 58, and 85 in the three preceding weeks These 109 deaths were equal to an annual rate of 3 3 per 1000, which was 6 0 per 1000 below the mean rate last week from the same diseases in the 76 large English towns The fatal cases of diarrhœa, which had been 23, 24, and 48 in the three preceding weeks, further rose last week to 68, of which 50 occurred in Glasgow, eight in Dundee, four in Aberdeen, two in Edinburgh, and two in Greenock The deaths from whooping-cough, which had been 22 19, and 26 in the three preceding weeks, were again 26 last week, and included 17 in Glasgow, five in Edinburgh, two in Paisley, and two in Leith The fatal cases of measles which had been 12, seven, and five in the three preceding weeks rose again last week to six of which two were registered in Glasgow and two in Edinburgh The deaths from diphtheria, which had been two in each of the two preceding weeks increased to five last week, and included three in Glasgow The deaths referred to diseases of the respiratory organs in these towns, which had been 75 55, and 47 in the three preceding weeks, further declined last week to 39, and were considerably below the number in the corresponding period of last year The causes of 13, or nearly 3 per cent, of the deaths registered in these eight towns last week were not certified

HEALTH OF DUBLIN

The death-rate in Dublin, which had been 17 5, 17 9, and 21 2 per 1000 in the three preceding weeks, further *rose to 27 0 per 1000 during the week ending August 13th* During the past four weeks the death rate has averaged 20 9 per 1000, the rates during the same period being 18 0 in London and 13 7 in Edinburgh The 196 deaths of persons belonging to Dublin registered during the week under notice were 42 in excess of the number in the preceding week and included 46 which were referred to the principal infectious diseases, against 15, 12 and 25 in the three preceding weeks, of these, 33 resulted *from* diarrhœa, five *from measles four from whooping* cough, two from diphtheria, one from scarlet fever and one from "fever" but not any from small pox These 46 deaths were equal to an annual rate of 6 3 per 1000, the death rates last week from the same diseases being 8 6 in London and 1 9 in Edinburgh The fatal cases of diarrhœa, which had been four and 15 in the two preceding weeks, further rose last week to 33 The deaths from measles, which had *been five, four, and three in the three preceding weeks* increased again to five last week The four fatal cases of whooping cough corresponded with the number in the preceding week The 196 deaths in Dublin last week included 69 among children under one year of age and 36 among [illegible] infants [illegible] while [illegible] nquest cases and three deaths from violence were registered, and 58, or nearly a third, of the deaths occurred in public institutions The causes of seven or nearly 4 per cent, of the deaths in Dublin last week were not certified

THE SERVICES

ROYAL NAVY MEDICAL SERVICE

THE following [illegible] geons M P Jones to the [illegible] 1904), and C C Macmilla[illegible]

ROYAL NAVAL VOLUNTEER RESERVE

The undermentioned has been appointed Lieutenant Robert Roxburgh (dated August 11th, 1904)

ROYAL ARMY MEDICAL CORPS

Colonel R Blood retires on retired pay (dated August 13th 1904) Lieutenant S C Bowle, from the Seconded List to be Lieutenant (dated August 1st, 1904) Lieutenant W B Taylor resigns his commission (dated August 10th, 1904)

Captain F H M Clarke, C M G, D S O, and Captain E C Hayes join the Home District for duty Captain S W Sweetnam is posted to the Station Hospital, Colchester, for duty Major J C Weir, sanitary officer of the Home District, is directed to investigate the cause of diphtheria among troops at the Guards' Depôt, Caterham

ARMY MEDICAL RESERVE OF OFFICERS

Surgeon Major A D Fraser to be Surgeon Lieutenant-Colonel (dated August 2nd, 1904)

VOLUNTEER CORPS

Rifle 4th Volunteer Battalion the King's (Liverpool Regiment) Arthur Price, late Surgeon, Royal Naval Artillery Volunteers, to be Surgeon Captain (dated August 13th, 1904) 5th (The Hay Tor) Volunteer Battalion the Devonshire Regiment Surgeon Lieutenant W J Stephens resigns his commission (dated August 13th, 1904) 3rd Volunteer Battalion the Royal Welsh Fusiliers Surgeon Lieutenant J R Williams to be Surgeon Captain (dated August 13th, 1904) 3rd Volunteer Battalion the South Wales Borderers Surgeon Major J R Essex to be Surgeon Lieutenant Colonel (dated August 13th, 1904)

VOLUNTEER OFFICERS' DECORATION

The King has conferred the Volunteer Officers Decoration upon the undermentioned officers of the Volunteer Force — *Home District Rifle* 18th Middlesex Rifle Corps Surgeon Major Clement Godson *South Eastern District Artillery* 2nd Sussex Royal Garrison Artillery (Volunteers) Surgeon Major Henry Habgood *Scottish District Rifle* 5th (Glasgow Highland) Volunteer Battalion the Highland Light Infantry Surgeon Major George Bell Todd

DEATHS IN THE SERVICES

Major John Henry Greenway, R A M C, on August 8th, at Wynberg Camp Cape Town He entered the service in 1885 and reached the rank of Major in 1897 During the South African war he served in the Orange River Colony

THE NEW ARMY SCHEME

We make no apology for again referring to Mr Arnold Forster's new army scheme because of the far reaching organic changes it introduces the nature and effect of which the nation does not seem wholly to have grasped and understood Such should certainly be the case before finally committing itself to carry them out The general principles laid down by the War Minister will commend themselves to everyone To reduce expenditure, to maintain a regular army mainly for service abroad and ready for war, to diminish numbers at home, and to improve generally the quality of our *troops by lopping off, as far as* practicable all inefficient and redundant material are unquestionably excellent ideas and aims But when we pass from the abstract to the concrete and have to formulate the methods in detail it becomes another and much more difficult matter The net result of the scheme shows a saving of something over a million only, and this has to be obtained at a big reduction of the forces at command Mr Arnold Forster is very enthusiastic as to the success of his scheme and in cooperation with the Army Council will no doubt do all he can to carry it out He thinks that by the additional attractiveness of the service and the improvement sanitary and social, of barrack buildings, and by adding to the soldier's comfort, the necessary number of recruits of the requisite age and physical quality will be forthcoming for the maintenance of a nine years foreign service army But this is a matter which has still to be put to the test of experience At what age is the soldier to be sent to India and abroad ? That is an important medical question Some misgiving is felt, too, about the newly proposed *military depot sy tem which will probably* prove an expensive item

SOLDIERS HOMES NEAR BATH

The Bishop of Bath and Wells on August 6th formally opened two homes for men of the Royal Horse and Field Artillery, which have been erected at Claverton near Bath The homes are the gift of Mrs and Miss Fordyce Buchan, in memory of Captain G Fordyce Buchan R F A who died from *enteric fever at Bloemfontein* May 21st, 1900 The bishop, in the course of his speech, recalled the incident how, when Captain Buchan was going to the war in South Africa on board ship inoculation was recommended as a protection against enteric fever. When the operation was being performed it was found that there was not sufficient serum for all to be inoculated. Captain Buchan said that he would go without it. The others were all operated upon and none of them died from enteric fever. Captain Buchan, however, who was not inoculated, died from enteric fever at Bloemfontein, the bishop adding that his unselfishness had practically caused his death.

THE WAR IN THE FAR EAST.

In the great naval actions which have recently taken place the Russians have been badly defeated and whatever considerations they may have had for their own escape and safety or whatever strategical or other purposes they may have had in view with the Port Arthur and Vladivostok squadrons they have failed to accomplish them. As regards the siege of Port Arthur a general assault on the part of the Japanese has begun and as their troops are in overwhelming force and occupy commanding positions its fate seems to be sealed; and lastly, the position of General Kuropatkin's force is still a perilous one, menaced as it is by the surrounding Japanese armies. The rains have again returned with the result of impeding all land operations and probably of increasing the sickness on both sides. It goes without saying that with the Russian naval disasters in the Pacific it is extremely unlikely that any fleet from the Baltic, should one even have started, can reach its destination before Port Arthur has fallen. The capture of that fortress, while inflicting a very heavy blow on Russian prestige in the East (nothing has probably happened like it since the fall of Sebastopol), will liberate to a great extent the besieging Japanese forces in that direction and enable them to take part in the military operations going on elsewhere. The losses in men and money entailed by this war have been deplorable and enormous. Whether Russia will continue to prosecute it to the end, hoping to break down her enemy by weight of numbers and finance, or whether the Czar, influenced by the auspicious birth of a son and other State considerations, may seek some means of peace, no one can say. We are glad to notice, in the meantime, that the far-seeing rulers of Japan have apparently sought to do what they could in the mitigation of the horrors of the siege by offers for the removal of all non-combatants from Port Arthur, while on the occasion of the sinking of the *Ruric* the Japanese squadron hastened to rescue the drowning Russians, of whom they picked up about 600. But little is forthcoming in regard to the purely medical news of the war. It has been stated that there are many thousand sick and wounded inside Port Arthur accommodated in the various public buildings, all of which have been utilised as hospitals, but such statements rest upon mere hearsay and conjecture. It may, nevertheless, be safely assumed that there must be a large number of unfortunate sufferers inside the besieged garrison. According to the latest Russian official returns the losses of the Port Arthur garrison during the fighting between August 8th and 10th were: Killed, seven officers and 248 men; wounded, 35 officers and 1653 men; missing, one officer and 83 men.

The *Standard* of August 10th contains a long and interesting communication from its special correspondent headed "Cruise of the *Manshu Maru*" and dated June 18th. While at Sasebo he was able to see the arrangements made for transporting the sick and wounded from the fleet to the base hospital. A passenger vessel has been turned into a hospital ship for this purpose, the saloons fitted up with swinging cots, and the cabins used as operating and dressing rooms. The ship is manned by seven surgeons and 50 nurses, and as the vessel only accommodates 180 patients it will be seen what great importance the Japanese attach to female nurses, there being one nurse to every three or four patients. The ship can make the voyage to the fleet and back in about five or six days. Admiral Togo's fleet has, up to the present, been singularly free from serious sickness. There have been a few cases of enteric fever, while pleurisy has been responsible for most of the other invalids. Pleurisy is a disease the Japanese are somewhat prone to. The base hospital at Sasebo at present contains 305 patients, mostly sick or wounded by shell fire. Since the commencement of the war only seven deaths have occurred among those admitted into hospital.

The health of the troops of the first Japanese army, despite reports to the contrary, is stated to be excellent. They are not suffering from any febrile infectious disease and there is possibly less mortality or disease among them than in any army that has previously taken the field.

RUSSIAN MEDICAL STUDENTS: REDUCTION IN THE NUMBER OF CANDIDATES.

The list of applications just closed for enrolment as students in the Imperial Military Medical Academy numbers about 500, or some 300 less than last year. The *Novoe Vremya* says the results of the examinations for admission will be known in the latter half of August.

Correspondence.

"Audi alteram partem."

CONTRACT PRACTICE.

To the Editors of THE LANCET.

SIRS,—We have not yet arrived at a solution of the difficulty arising when a dispute occurs between medical men and their patients in contract practice; first, as to how we can keep away those who are ready to take advantage of any dispute; and next, when a medical man has come into a district to take up the practice at a lower rate, what shall be the proper way of dealing with such an individual. In short, we want some method of properly dealing with a man who takes up the position of a "blackleg." The warning notices put in THE LANCET and those put in the lay papers by our medical union have to a certain extent been useful, but they have not stopped all those who are indifferent to the stigma of "blackleg." And when the "blackleg" is duly installed in a district it is extremely difficult to get him out of that position. A few have been persuaded to relinquish the ill-gotten appointment; some have developed such weakness of character that their presence has shown up the righteous position of the old practitioner. Boycotting is generally carried out but it does not cause the offender to leave the district. In most cases the "blackleg" obtains his position through the canvassing of a committee of working men who do this work freely and with energy.

The General Medical Council has passed a resolution condemning any medical man who shall take up such a position and against whom the charge of canvassing can be satisfactorily proved. This is the point where we meet with our difficulty in such cases. Although we know that canvassing is done by agents on behalf of the intruder, yet it is extremely difficult to obtain the proof that is essential and to satisfy the General Medical Council. The secretaries of the County of Durham Medical Union have been in correspondence with the General Medical Council with a view to get help from that quarter, proposing the attendance of a deputation from this union to discuss the point, but we can make no progress towards accomplishing anything. Now we turn to the profession as a whole and ask as many practitioners as possible to put their names to a petition to the General Medical Council urging "upon the Council the desirability of supporting medical men who struggle to maintain the honour and dignity of the profession, especially when opposed by others who are ready to take advantage of any dispute in contract practice by canvassing or underselling, or in the obtaining of contract appointments by similar means." Copies of this petition may be obtained from Messrs. Graham and Shepherd, 32, John-street, Sunderland, secretaries to the County of Durham Medical Union.

I am, Sirs, yours faithfully,
EDWARD JEPSON,
President, County of Durham Medical Union.
Durham, August 11th, 1904.

TRANSMISSIBILITY OF PLAGUE TO THE MONGOOSE.

To the Editors of THE LANCET.

SIRS,—At a well-attended meeting of the Epidemiological Society on Nov. 20th, 1903, to hear Dr. W. J. Simpson's paper on the Epidemiology of Plague (an account of which was published in THE LANCET of Nov 28th, 1903, p 1506), Mr B G Corney (Fiji) inquired whether mongooses suffered from plague He mentioned that the matter was of some importance because some of the Colonial islands had *imported ichneumons to kill off the rats None of us* were able to answer his question, though we told him that ferrets and many other animals were susceptible and therefore probably mongooses were not immune On consulting the report of the German Plague Commission, I see that one ichneumon died from characteristic plague six days after it was subcutaneously inoculated on the hind leg Another ichneumon was fed with the organs (containing many bacilli) of a rat which had died from plague, the animal succumbed to plague five days later, being apparently infected through the mucous membrane of the mouth, not from the stomach Again in Nothnagel's Encyclopædia (Band I) in the article "Die Pest von Muller und Poch Ichneumonratten (Herpestes griseus) were experimented on Though feeding these animals with plague bacilli did not produce plague, they died after intraperitoneal infection and the post mortem appearances were those of septicæmic plague I think it must be assumed that a mongoose is a dangerous animal to introduce into any colony affected, or likely to be affected by *human plague The mongooses in Egypt live chiefly in* the desert, and therefore there is no evidence as yet of their having been attacked by plague

I am Sirs, yours faithfully
F M SANDWITH M D Durh, F R C P Lond
Lecturer at the London School of Tropical Medicine

THE NATURE AND ETIOLOGY OF CANCER

To the Editors of THE LANCET

SIRS,—Your leading article in THE LANCET of August 13th, p 473, headed "The Nature and Etiology of Cancer,' will be read by everyone interested in that question with great appreciation of its temperate and most careful analysis and of its fulness of home truths The concluding sentences are entitled to special weight The article says Let those who in future essay to advance our knowledge of cancer regard it as their first duty to add *new facts* to those long known They may be more difficult to find than new explanations of the old ones but their accumulation will assuredly point somewhere much more definitely than the too many explanations of the old facts have done

More than 20 years ago I ventured to say in a preface to an essay on Cancer that I would point to the discussion on cancer at the Pathological Society of London in 1874 to show how unsatisfactory the then state of our knowledge was that there was a want of well ascertained facts and that the opportunity of contributing facts of great interest in relation to cancer must fall to almost *every practitioner* It is to be hoped that your article will stimulate the contribution of the facts which are so much needed Fortunately, at the present time there now exist centres of investigation to which contributions can be sent

I am, Sirs, yours faithfully,
London August 16th 1904 T W NUNN

PARALYSIS FROM LESION OF THE UPPER PART OF THE BRACHIAL PLEXUS

To the Editors of THE LANCET

SIRS —In a note on this subject published in THE LANCET of August 13th, p 447 I described two cases in which as the result of injury the deltoid, biceps brachialis anticus and supinator longus were paralysed (as in Erb's paralysis) but in addition there was paralysis of the triceps and extensors of the wrist and fingers I suggested that the cause of this form of paralysis might be lesion of the seventh cervical nerve root in addition to lesion of the fifth and sixth roots and that the lesion might affect the upper cord of the brachial plexus (formed by the union of these three roots) or the roots before their union Since the report of these cases was sent to THE LANCET Dr Wilfred Harris has drawn attention to the anatomical abnormalities in the composition of the nerve trunks of the plexus—the 'prefixed and postfixed type
the brachial plexus He points out that 'the
plexus may be therefore, shifted up or down as
as nearly half a root and this anatomical variation is of great importance in the diagnosis of nerve root lesion" (see report of proceedings of the Neurological Society, *Brain*, 1903, pp 613-15) In any case of paralysis of the arm of the form which I described it would, of course, be impossible to *say without post mortem examination whether the paralysis* was due to lesion of the fifth, sixth, and seventh nerve roots (united or separate), or whether the case was one of lesion of the fifth and sixth roots only, in a prefixed type of brachial plexus The latter would be a possible explanation in addition to the one which I have mentioned in my report

I am, Sirs, yours faithfully,
Manchester August 16th 1904 R T WILLIAMSON

MEMORIAL TO SIR THOMAS BROWNE, M D

To the Editors of THE LANCET

SIRS,—The Sir Thomas Browne Memorial Committee has commissioned Mr Henry Pegram, A R A, to prepare the statue which is to be erected at Norwich in memory of the famous author of the "Religio Medici' Mr Pegram contributed to this year's Academy 'Sibylla Fatidica,' which has been bought for the Tate Gallery by the President and Council of the Academy as trustees of the Chantrey bequest *A few more pounds are still required to complete the neces*sary funds and contributions may be sent either to me, at King street House, Norwich, or to the Sir Thomas Browne Memorial Account" at Messrs Barclay and Co's Bank, Norwich —I am Sirs, yours faithfully,
August 12th 1904 F R EATON Honorary Secretary

THE VALUE OF THE ADDITION OF CITRATE OF SODA TO COW'S MILK IN INFANT FEEDING

To the Editors of THE LANCET

SIRS —Dr *F J Poynton's instructive* paper on the Value of the Addition of Citrate of Soda to Cow's Milk in Infant Feeding in THE LANCET of August 13th, p 433, leads me to add my testimony to the great usefulness of this simple expedient Since reading Dr A E Wright's suggestion '*On the Possible Advantages of Employing Decalcified Milk* in the Feeding of Infants and Invalids' in THE LANCET of July 22nd, 1893 I have constantly ordered the addition of citrate of soda for persons who could not otherwise take milk Dr Wright in his original paper says that an addition to milk of 1 in 200 of citrate of soda suffices to prevent any rennet coagulation As a
from seven to nine ounce
one gramme of citrate of
the right proportion This decalcified milk has in my experience been always well borne by persons who had previously been upset by milk In typhoid fever it forms an ideal nourishment

I am, Sirs yours faithfully,
WILLIAM R HUGGARD
Davos-Platz Switzerland August 16th 1904

A MINISTRY OF PUBLIC HEALTH

To the Editors of THE LANCET

SIRS —The medical profession is consistently educating the public in the value that should be attached to State medicine and the need for a definite national or State 'policy in its favour In August, 1904 the following resolutions have been passed —

1 The Royal Institute of Public Health at Folkestone advocated a Ministry of Health and recommended that the subject should be made an official one in the programmes of all international or national health congresses

2 The Oxford meeting of the British Medical Association desired that a Royal Commission be appointed to report upon the suggested reorganisation of the Local Government Board, the principles of which were defined in a memorandum to the Medico Political and Public Health Committees

3 The Interdepartmental Committee on Physical Deteriora
recommendations reported on the
advisory council This would
ll legislative and administrative
points concerning the public health and would receive and

apply the information derived from the proposed Bureau of the Anthropometric Survey with the whole weight of Government authority and scientific prestige behind it.

4. Sir Lauder Brunton is forming the National League for Physical Education and Improvement, embracing a comprehensive educational scheme.

Undoubtedly, however, one of the strongest educational agencies would be a strenuous expert Minister of Health of Cabinet rank. Such an appointment has been approved at congresses at Exeter in 1902 and at Bradford, Swansea, and Brussels in 1903. May I be allowed to repeat the outlines of a Ministry based on the War Office Reorganisation scheme at this opportunity? They are, in brief, an advisory committee, an administrative council, an increased inspecting staff, and an extended sanitary and pathological service. The keystone of the fabric is, however, a leader in the person of a Minister and I venture to urge that the British Medical Association and the National League for Physical Education make this the focus of their aspirations. In consideration of the increasing numbers and the reputation of those of our profession interested in this organisation of State medicine it appears only necessary to imbue the laity with similar sentiments through the branches of the British Medical Association and other agencies.

I am, Sirs, yours faithfully,
F. G. BUSHNELL, M.D.,
Pathologist to the Sussex County Hospital.
Brighton, August 13th, 1904.

THE USE OF PHENYLHYDRAZIN IN THE CLINICAL EXAMINATION OF URINE.

To the Editors of THE LANCET.

SIRS,—I am afraid that Dr. A. F. Bilderbeck Gomess has not realised the reason for which my paper was written on the Use of Phenylhydrazin in the Clinical Examination of Urine.[1] I am in entire agreement with Dr. Gomess on the value of phenylhydrazin in the clinical examination of urine and, as he suggests, the reagent should be applied to the urine directly and not after previous hydrolysis by boiling with hydrochloric acid. In this case the test is of the greatest value in the detection of sugar in a diabetic urine and as I pointed out in my paper normal urines do not give characteristic crystals. I regard the phenylhydrazin test as applied directly to a urine of greater value than the Fehling's test and many of the other tests used for the detection of sugar in urine. The object of my paper was to point out that the production of crystals from a urine which had been previously hydrolysed by boiling with hydrochloric acid was not of any pathological significance, since, as I have proved, normal urines give very characteristic crystals with phenylhydrazin after treatment in this way. It has recently been stated that the production of crystals in a urine on treatment with phenylhydrazin after previous hydrolysis is an indication of disease of the pancreas, and the object of my paper was to point out that this reaction is given equally well with normal urines and cannot, therefore, be regarded as an indication of pancreatic disease.

I am, Sirs, yours faithfully,
August 15th, 1904. W. H. WILLCOX.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Small-pox in Dublin.

AT a special meeting of the public health committee held in the municipal buildings on August 10th, Sir Charles A. Cameron reported that three cases of small-pox had occurred in Dublin and had been conveyed to the isolation hospital. He added that on no previous occasion was the department so well prepared as at present to resist the spread of small-pox on its first appearance. He said, moreover, that there was every reason to believe that this small outbreak would be stamped out at once. There were no additional cases up to August 16th.

Portrush Cottage Hospital.

A bazaar was opened in the town hall, Portrush, co. Antrim, on August 9th for the furnishing and equipment of the Cottage Hospital, the starting of which is due to the efforts of a local lady, Miss Reynolds. The Provost of Trinity College, Dublin (Dr. Traill) presided and delivered an interesting address on the value and importance of hospitals.

Police Appointment.

Dr. Alexander Montgomery has been appointed medical attendant to the Royal Irish Constabulary in O District of Belfast in succession to Dr. W. M. Killen, resigned. There were 25 candidates.

Small-pox in Ulster.

This disease, which was introduced from Glasgow into Belfast, has spread in different directions over Ulster, the last place for it to appear being in Monaghan where there have been two cases, one of which, a girl, has died. 15 cases are being treated in Castleblayney workhouse fever hospital from Crossmaglen.

Appointment for a Belfast Medical Professor.

Dr. J. Lorrain Smith, Musgrave professor of pathology, Queen's College, Belfast, has been appointed joint lecturer in the same subject in the Victoria University, Manchester. Professor S. Delépine is to take the public health portion of the chair and Professor Smith is to have the pure pathology. Dr. Thomas Houston of Belfast will be a candidate for the chair thus vacated at Queen's College. He has been an assistant to Professor Smith, is a research scholar of the British Medical Association, and he held the pathological studentship in the Royal University. He has done considerable original work and is at present joint lecturer on medical jurisprudence with Professor Smith.

Queen's College, Belfast.

The report of the president of Queen's College, Belfast, for the session 1903–04 shows that in the Faculty of Medicine there was an increase in the number of entrances; indeed, the entrances at Queen's College, Belfast, were higher than those in any other medical school in Ireland with the exception of the Catholic University School of Medicine, Dublin, which shows an entrance of three more students. There is also an increase in the law and engineering faculties. Deep regret is expressed at the continued refusal of the Government to subsidise to a fuller extent the College, which is a Crown one, and still more as the public have subscribed nearly £100,000 for its equipment.

Health of Belfast.

From June 19th until July 16th 12 cases of small-pox have been notified and since the outbreak in October last 102 persons have been admitted into the small-pox hospital, of whom 75 were discharged cured, three died, and there were still 24 in the hospital, while 328 "contacts" passed through the intercepting hospital and 61 remained under observation. Not an individual who has been revaccinated has been admitted into the small-pox hospital. At present Belfast is comparatively free from infectious disease, the number of cases of scarlet fever being much fewer than for a considerable time, as also are those of typhoid fever. The annual death-rate in Belfast was 17·3 for the past four weeks.

August 16th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Surgical Treatment of Acute Hepatitis.

AT the meeting of the Society of Surgery held on July 27th M. K. J. L. Faure read a paper sent in by M. Denis of Constantinople. It dealt with the case of a sailor who showed symptoms of acute hepatic infection—viz., jaundice, fever, hypochondriac pain, and enlarged liver. M. Denis opened the abdominal cavity and found the liver much enlarged and congested. He punctured the liver in various places without result for he found no pus. He then closed the abdomen and to his great astonishment the temperature fell and never rose again and the patient recovered completely. The result in this case may be compared with many others previously sent in by various observers. Recovery has often taken place after simple laparotomy, together with exploratory puncture, and in some cases the patient has recovered after laparotomy alone. At the same meeting M. Lejars gave an account of the case of a woman who had been admitted to the hospital in a very serious condition She was extremely thin, slightly jaundiced and her liver was enlarged Laparotomy was performed and M Lejars found a tumour, continuous with the liver, of a yellowish grey colour and of a woody consistency M Lejars did nothing further believing that he had to deal with a new growth, and closed the abdomen To his great astonishment the patient began to improve and at the end of a few months the tumour had entirely disappeared Ten years later however, a gummatous swelling appeared on the tibia which yielded to antisyphilitic treatment The tumour of the liver was doubtless a gumma but it disappeared without any other treatment except the simple laparotomy Various other speakers at the meeting related cases confirming the results in the two cases mentioned above

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[1] THE LANCET, July 23rd, 1904, p. 211.

The Sale of a Medical Practice

Questions as to the sale of a practice often arise and are the source of much discussion and very often of legal proceedings Jurists, however, have little by little arrived at certain definite canons which must be observed in such circumstances As a legal principle, the simple sale of a practice—that is to say, when nothing is transferred except the trust and the willingness of the patients to be transferred from one medical man to another—has no legal value whatever, but the sale of a practice is recognised as being of definite legal value when at the same time as the patients are transferred other objects are handed over—for instance, personal effects instruments, and medical books, the transfer of the lease of a consulting room An engagement on the part of the vendor to introduce the buyer to his patients, or a bond by the vendor not to practise within a certain definite radius of his old sphere of work, also make the transaction a genuinely legal one Another point has just been decided—viz , Is the transfer of a practice of equal legal value when the sale is carried on not by the actual practitioner himself but by his widow or by his heirs? Recently a medical man bought the practice of a deceased brother practitioner and after the contract had been signed he refused to execute it because in the meantime he had found what he considered a better opening in another town, and when the widow of the deceased practitioner asked for damages he pleaded that the contract of the sale was of no legal value The matter came before the courts and the tribunal gave judgment in favour of the medical man, but the Court of Appeal reversed this decision and granted the widow the damages which she demanded giving as reasons for this judgment that the sale of the practice included articles of furniture the lease of a consulting room, and an engagement to give a personal introduction to the patients

Psychotherapy and Hysteria

At a meeting of the Academy of Medicine held on July 16th M Janet described some abnormal psychological conditions presented by a young girl who had become hysterical through grief for the death of her mother While suffering from delirium hallucinations, and hysterical attacks she had an unusually full recollection of the death and of all the circumstances associated with it, but in the lucid intervals when her state might be regarded as normal she had almost no recollection of the very events in question and appeared to look on her mother s death as a very trivial matter There were therefore hypermnesia during the attacks and amnesia during the intervals between the attacks M Janet has observed several similar cases He commenced by "re educating the memory of the patient and this being accomplished the phenomena of hypermnesia and hallucination disappeared M Janet then called attention to the importance and value of psychotherapy provided always that it be applied in the proper degree and judiciously employed in suitable cases

Use of an Artificial Larynx after Laryngectomy

At a meeting of the Surgical Society held on July 20th M Sébileau reported a case of cancer of the larynx in which he had performed an operation similar to that of Périer Recovery was rapid and the scar in the neck was quite sound To replace the larynx the choice lay between Gluck s artificial larynx, which was a modification of a tracheotomy tube, and Martin s artificial larynx which was not applicable in the present instance as the skin had to be brought over it and an extensive operation would have been necessary in order that it might be placed in position M Sébileau therefore asked M Deler, instructor in prosthetics at the Dental School, to make a special pattern of the larynx The apparatus constructed by M Deler consisted (1) of a rectangular box attached in front of the cannula worn by the patient and having a valve which permitted inspiration but not expiration , and (2) of a portion contained within the mouth corresponding to the palate and glottis The result was very good and the patient could make himself understood quite well, although the tone was decidedly different from that of the natural voice

Intra-articular Osteotomy for Ankylosis of the Knee joint

At the same meeting of the Surgical Society M Broca described a case under the care of M Guillon of La Tremblade The patient was a boy 12 years of age, who suffered from osseous ankylosis of the knee joint the effect of an injury M Guillon performed intra articular osteotomy and obtained a good result as appeared from a photograph which was shown These cases of special osteotomy are rare, but one in the elbow has been already reported to the Surgical Society M Broca said that M Guillon had placed the limb after the operation in a position of semiflexion Although the result was good this position was hardly to be recommended

August 15th

NEW YORK

(FROM OUR OWN CORRESPONDENT)

Resignation of Dr Shrady

Dr George F Shrady who for more than 38 years has been the editor of the *New York Medical Record* has just resigned that position Dr Shrady has occupied a unique place in American medical journalism, in fact with the exception of the first Mr Wakley of THE LANCET, no editor of a medical journal published in English has held a like position for so long a period There have also been points of similarity between the editorial careers of the American and English medical editors Dr Shrady brought the journal of which he was editor from an insignificant sheet to a place in the front rank of American medical journalism In addition to his executive abilities and courage Dr Shrady in his editorial capacity was possessed of both tact and a remarkable gift of seizing upon salient points of medical policy and presenting them clothed in forcible expressive, and attractive phraseology Above all, he has been a staunch and true friend to the medical man has studied his interests advocated his cause, and fought to redress his wrongs with the most unselfish zeal He has left a decided mark upon American medical journalism Dr Thomas L Stedman the former associate editor of the *Medical Record* who has assisted Dr Shrady in the management of the journal for some 20 years, now becomes editor-in chief

Suicide in New York City

There has been a decided tendency towards increase in the number of suicides in New York city Records of the Police Department and of the Health Board show that during the first quarter of the current year 208 individuals took their own lives It is further computed that the number of suicides for the year will be more than 900 This year 224 out of 1 000 000 will have put an end to themselves, the annual ratios for the four preceding years having been 215 187 206 and 150 Of 806 persons who committed suicide in New York city last year 35 per cent were native born 26 per cent were German, 7 per cent were Irish, 5 per cent were Russian 5 per cent were Austrian, and 3 per cent were English Poisoning was the most common mode of suicide, about 47 per cent choosing this method of ending existence Carbolic acid was by far the most favourite poison used 20 per cent sought death by shooting, 16 per cent used illuminating gas for the purpose, while 8 per cent resorted to hanging

The Laboratory of the Rockefeller Institute

The building of the laboratory of the Rockefeller Institute of Medical Research is about to be commenced The edifice will be placed on Exterior street, east of Avenue A It is to be a five storey building 136 feet front with a pilastered façade of limestone and ornamental brick The upper storeys are to be furnished as general and special laboratories and research rooms and the roof will have houses for the animals An auditorium hall, library, and study will be on the first floor, while an annex will contain a two storey building for the animals and a power house

August 6th

apply the information derived from the proposed Bureau of the Anthropometric Survey with the whole weight of Government authority and scientific prestige behind it.

4. Sir Lauder Brunton is forming the National League for Physical Education and Improvement, embracing a comprehensive educational scheme.

Undoubtedly, however, one of the strongest educational agencies would be a strenuous expert Minister of Health of Cabinet rank. Such an appointment has been approved at congresses at Exeter in 1902 and at Bradford, Swansea, and Brussels in 1903. May I be allowed to repeat the outlines of a Ministry based on the War Office Reorganisation scheme at this opportunity? They are, in brief, an advisory committee, an administrative council, an increased inspecting staff, and an extended sanitary and pathological service. The keystone of the fabric is, however, a leader in the person of a Minister and I venture to urge that the British Medical Association and the National League for Physical Education make this the focus of their aspirations. In consideration of the increasing numbers and the reputation of those of our profession interested in this organisation of State medicine it appears only necessary to imbue the laity with similar sentiments through the branches of the British Medical Association and other agencies.

I am, Sirs, yours faithfully,
F. G. BUSHNELL, M.D.,
Pathologist to the Sussex County Hospital.
Brighton, August 13th, 1904.

THE USE OF PHENYLHYDRAZIN IN THE CLINICAL EXAMINATION OF URINE.

To the Editors of THE LANCET.

SIRS,—I am afraid that Dr. A. F. Bilderbeck Gomess has not realised the reason for which my paper was written on the Use of Phenylhydrazin in the Clinical Examination of Urine.[1] I am in entire agreement with Dr. Gomess on the value of phenylhydrazin in the clinical examination of urine and, as he suggests, the reagent should be applied to the urine directly and not after previous hydrolysis by boiling with hydrochloric acid. In this case the test is of the greatest value in the detection of sugar in a diabetic urine and as I pointed out in my paper normal urines do not give characteristic crystals. I regard the phenylhydrazin test as applied directly to a urine of greater value than the Fehling's test and many of the other tests used for the detection of sugar in urine. The object of my paper was to point out that the production of crystals from a urine which had been previously hydrolysed by boiling with hydrochloric acid was not of any pathological significance, since, as I have proved, normal urines give very characteristic crystals with phenylhydrazin after treatment in this way. It has recently been stated that the production of crystals in a urine on treatment with phenylhydrazin after previous hydrolysis is an indication of disease of the pancreas, and the object of my paper was to point out that this reaction is given equally well with normal urines and cannot, therefore, be regarded as an indication of pancreatic disease.

I am, Sirs, yours faithfully,
August 15th, 1904. W. H. WILLCOX.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Small-pox in Dublin.

AT a special meeting of the public health committee held in the municipal buildings on August 10th, Sir Charles A. Cameron reported that three cases of small-pox had occurred in Dublin and had been conveyed to the isolation hospital. He added that on no previous occasion was the department so well prepared as at present to resist the spread of small-pox on its first appearance. He said, moreover, that there was every reason to believe that this small outbreak would be stamped out at once. There were no additional cases up to August 16th.

Portrush Cottage Hospital.

A bazaar was opened in the town hall, Portrush, co. Antrim, on August 9th for the furnishing and equipment of the Cottage Hospital, the starting of which is due to the efforts of a local lady, Miss Reynolds. The Provost of Trinity College, Dublin (Dr. Traill) presided and delivered an interesting address on the value and importance of hospitals.

Police Appointment.

Dr. Alexander Montgomery has been appointed medical attendant to the Royal Irish Constabulary in C District of Belfast in succession to Dr. W. M. Killen, resigned. There were 25 candidates.

Small-pox in Ulster.

This disease, which was introduced from Glasgow into Belfast, has spread in different directions over Ulster, the last place for it to appear being in Monaghan where there have been two cases, one of which, a girl, has died. 15 cases are being treated in Castleblayney workhouse fever hospital from Crossmaglen.

Appointment for a Belfast Medical Professor.

Dr. J. Lorrain Smith, Musgrave professor of pathology, Queen's College, Belfast, has been appointed joint lecturer in the same subject in the Victoria University, Manchester. Professor S. Delépine is to take the public health portion of the chair and Professor Smith is to have the pure pathology. Dr. Thomas Houston of Belfast will be a candidate for the chair thus vacated at Queen's College. He has been an assistant to Professor Smith, is a research scholar of the British Medical Association, and he held the pathological studentship in the Royal University. He has done considerable original work and is at present joint lecturer on medical jurisprudence with Professor Smith.

Queen's College, Belfast.

The report of the president of Queen's College, Belfast, for the session 1903–04 shows that in the Faculty of Medicine there was an increase in the number of entrances; indeed, the entrances at Queen's College, Belfast, were higher than those in any other medical school in Ireland with the exception of the Catholic University School of Medicine, Dublin, which shows an entrance of three more students. There is also an increase in the law and engineering faculties. Deep regret is expressed at the continued refusal of the Government to subsidise to a fuller extent the College, which is a Crown one, and still more as the public have subscribed nearly £100,000 for its equipment.

Health of Belfast.

From June 19th until July 16th 12 cases of small-pox have been notified and since the outbreak in October last 102 persons have been admitted into the small-pox hospital, of whom 75 were discharged cured, three died, and there were still 24 in the hospital, while 328 "contacts" passed through the intercepting hospital and 61 remained under observation. Not an individual who has been revaccinated has been admitted into the small-pox hospital. At present Belfast is comparatively free from infectious disease, the number of cases of scarlet fever being much fewer than for a considerable time, as also are those of typhoid fever. The annual death-rate in Belfast was 17·3 for the past four weeks.

August 16th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Surgical Treatment of Acute Hepatitis.

AT the meeting of the Society of Surgery held on July 27th M. K. J. L. Faure read a paper sent in by M. Denis of Constantinople. It dealt with the case of a sailor who showed symptoms of acute hepatic infection—viz., jaundice, fever, hypochondriac pain, and enlarged liver. M. Denis opened the abdominal cavity and found the liver much enlarged and congested. He punctured the liver in various places without result for he found no pus. He then closed the abdomen and to his great astonishment the temperature fell and never rose again and the patient recovered completely. The result in this case may be compared with many others previously sent in by various observers. Recovery has often taken place after simple laparotomy, together with exploratory puncture, and in *some cases the patient has recovered after laparotomy* alone. At the same meeting M. Lejars gave an account of the case of a woman who had been admitted to the hospital in

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[1] THE LANCET, July 23rd, 1904, p. 211.

SIR WILLIAM MITCHELL BANKS,
CONSULTING SURGEON TO THE LIVERPOOL ROYAL INFIRMARY AND EMERITUS PROFESSOR OF ANATOMY IN THE UNIVERSITY OF LIVERPOOL.

DR. T. GILBART-SMITH,
PHYSICIAN TO THE LONDON HOSPITAL AND TO THE ROYAL HOSPITAL FOR DISEASES OF THE CHEST.

SIR FREDERIC BATEMAN
CONSULTING PHYSICIAN TO THE NORFOLK AND NORWICH HOSPITAL AND TO THE EASTERN COUNTIES ASYLUM

Fellowship without a hitch From 16 years' experience on the Council and its committees I should say this incident in the history of the professional examinations of the College was a unique one Both in the dissecting room as a demonstrator and subsequently in the anatomical theatre Sir William Banks was seen to great advantage He spent an immense amount of time in making a most excellent and comprehensive collection of diagrams (many of them quite works of art) and anatomical preparations (of his own dissections) for the instruction *of his class He had a great belief in giving his students* not only a discourse but something to look at He rarely published a surgical paper without introducing one or more original illustrations He believed in teaching by the eye as well as by the ear concurrently His dissecting room aptitude and his method of displaying it proved of great service to him when he became assistant surgeon and subsequently surgeon and lecturer on clinical surgery at the Royal Infirmary Some of his operations which required in particular accurate and extensive dissection—for instance, the removal of growths and tumours about the neck and the ligature of large arteries in connexion with aneurysms—were models of execution and at the same time demonstrated the breadth and utility of his experience as an anatomist He was an excellent colleague at the bedside of either a hospital or private patient and never spared himself to help whoever was associated with him in the most loyal and disinterested manner Like many men of decision he had strong likings and dislikings and did not hesitate to say so even at the risk of giving offence in high quarters It *may* be *truly said of* him that he had the courage of his convictions

THOMAS GILBART SMITH, M A , M D DUB , F R C P LOND ,

PHYSICIAN TO THE LONDON HOSPITAL.

THE death of Dr T Gilbart Smith, which we announced last week came as a great shock to his many friends He was in the active practice of his profession and with the exception of the members of his family no one knew that his health gave cause for anxiety He was enjoying a holiday in Devonshire with one of his sons and whilst bicycling on the evening of August 3rd suddenly fell from his machine and when his son reached him life was found to be extinct Death was due to angina pectoris, the attack probably having been induced by the effort of mounting his bicycle

Dr Gilbart Smith was born in 1848 and was the son of the Rev *J Denham Smith of Dublin He* was *educated* at a school in Shropshire and then proceeded to his medical studies at Trinity College, Dublin where he graduated in 1869, *passing* the examination *for the Membership of the* Royal College of Surgeons of England two years later He took the degree of M D in 1873 He likewise studied at St Bartholomew s Hospital and at Paris He was elected a Fellow of the Royal College of Physicians of London in 1885 In 1878 he was appointed assistant physician to the London Hospital, becoming full physician in 1894 In addition to holding this appointment at the time of his death he was physician to the Royal Hospital for Diseases of the Chest City road and consulting physician to the Tottenham Hospital, to the Mildmay Park Cottage Hospital and to the Cripples Nursery He was also chairman of the hospital committee in connexion with the Mission to Deep sea Fishermen He was one of the Vice Presidents of the Medical Society of London—a society in which he had served on the council and as secretary , he was also one of the trustees of the Fothergillian Fund

Dr Gilbart-Smith was essentially a clinician He had gathered his medical knowledge from a close observance of disease as presented in actual practice at the hospitals and elsewhere He recognised that medicine was not only a science but an art and that to become a successful physician it was necessary to educate the senses in every way possible He possessed in a high degree the faculty that has been aptly termed ' clinical instinct ' and so was frequently able to arrive at a correct diagnosis more speedily than one who relied entirely on theory We may quote Corvisart s observations on the art of medicine as being particularly applicable to *Dr* Gilbart-Smith s methods and teaching in clinical work "The education of the senses is so important, so indispensable, that without it *I do not think it possible* to be a skilful physician at the bedside of the patient And what is it, in fact, which is commonly called experience in medicine, which prevails so often over the greatest erudition, the most solid information, but the result of the frequent methodical, and just exercise of the senses, whence are derived such facility in their application such readiness of appreciation, such certainty of judgment sometimes so rapid that all these acts appear to be simultaneous and the aggregate of which are comprehended under the denomination of tact? ' Dr *Gilbart Smith s lectures in class* room or ward *all* bore the stamp of original thought and practical experience and those who served under him as house physicians or clerks especially benefited by his tuition in practical work His genial Irish nature and ready wit, combined with his handsome and commanding presence, endeared him to all who knew him He was ever ready to lend a helping hand or encouraging word to a student or young practitioner just starting on his professional career Amongst the students he was immensely popular He took the greatest interest in all the various societies and clubs in connexion with the London Hospital and held office in many of them In short in every way he gave cordial support to all that appertains to the social life of the students outside their professional work and thereby greatly assisted the popularity and success of the medical school His contributions to medical literature were not many but such papers as he read before the medical and other societies were of a strictly practical type

Dr Gilbart Smith married in 1870 the daughter of Mr Thomas Bewley of Rockville co Dublin, and at once *commenced* practice in Harley street occupying until his death the same house He leaves a widow and three sons, one of whom is in the medical profession The esteem in which he was held by his colleagues and friends was demonstrated by the large attendance on the day of his funeral After a brief service at his house the interment took place at Hampstead Cemetery the body being borne to the grave by personal friends who were also representatives of the various hospitals to which he was attached The service in the cemetery was of the simplest character in accordance *with his own wishes Around the grave were gathered many* members of the London Hospital staff and committee and numerous friends belonging to the medical profession who cherished memories of acts of kindness shown to them during his life time

SIR FREDERIC BATEMAN, M D ABERD , F R C P LOND ,

CONSULTING PHYSICIAN TO THE NORFOLK AND NORWICH HOSPITAL.

SIR Frederic Bateman of Norwich, who died at his residence in that city on August 10th, had for many years been recognised as one of the foremost representatives of the medical *profession in East Anglia He had attained a great* age and the closing scene was of brief duration On August 8th he attended a meeting of the managers of the Bethel Hospital for the Insane an institution with which he had been connected for many years and resigned his position as consulting physician On the 9th he was out of doors but *in the evening he complained of illness* and he passed away in the early hours of the following morning

Sir Frederic Bateman belonged to a Norwich family and was born in 1824 his father Mr John Bateman, being sheriff of the city in 1837 His medical education was received in Paris and at University College London He obtained the French medical qualification of Officier de Santé in 1846 in 1849 he was admitted M R C S Eng and in 1850 he graduated as M D at the University of Aberdeen also in the same year taking the diploma of L S A In 1851 he was appointed house surgeon to the Norfolk and Norwich Hospital and on retiring from that position he engaged in general practice as a partner of the late Mr Gil son In 1864 on the retirement of the late Dr Ranking he became physician to the Norfolk and Norwich Hospital an appointment which he held till 1895 In 1866 he was admitted a Member of the Royal College of Physicians of London and in 1876 he was elected a Fellow In 1895, after 30 years service on the staff *of the Norfolk and Norwich Hospital he* became consulting physician He was also consulting physician to the Eastern Counties Asylum for Idiots to the Jenny Lind

Infirmary for Children, to the Norfolk and Norwich Eye Infirmary, to the Norwich City Asylum, and, as already mentioned, to the Bethel Hospital for the Insane. He was a member of a variety of medical societies, British and foreign, as well as a foreign associate of the French Academy of Medicine. His most important published work was a treatise on Aphasia which gained the Alvarenga prize of the French Academy of Medicine; the first edition, the title of which was "Aphasia, or Loss of Speech, and the Faculty of Articulate Language," appeared in 1870; the second edition, much enlarged, in which the title was changed to "Aphasia and the Localisation of the Faculty of Speech," was issued in 1890. He was also the author of "The Idiot and his Place in Creation," as well as of contributions to THE LANCET and other periodical literature of the profession. He sat in the Norwich town council for the old Third Ward and in 1872 served the office of sheriff, as his father had done before him, fulfilling the duties of the position so well that special reference to his merit in this capacity was made in the votes of thanks awarded to him at the end of his term. During his shrievalty the Social Science Congress was held in Norwich and Sir Frederic Bateman took an active part in the discussions. He read a paper to the members of the Churchman's Club on Darwinism tested by Scientific Researches in Language, declaring himself to be altogether opposed to the theories of the evolutionists. In 1892 he received the honour of knighthood. In 1893 the University of Aberdeen conferred on him the degree of LL.D.

A medical friend of Sir Frederic Bateman has sent us the following details as to some of his personal characteristics:—His special taste was for literary work and his book on "Aphasia" was the labour of the most active years of his life. He had resided in Paris and was thoroughly conversant with French medicine and its literature. He was a great linguist and, in fact, an accomplished scholar in both modern and classical languages. His work shows abundantly how deeply read he was in all that had been written on his subject. In addition to his literary and scientific work he carried on a consulting practice in Norwich and the surrounding district and his services were in requisition particularly as an expert in diseases of the brain. As a colleague he was all that could be desired and his relationship with his brother practitioners was marked by the greatest cordiality. It was felt that with his absorption in literary pursuits he was beyond the reach of any of the petty frictions that sometimes mar inter-professional relations. He was of a most kindly disposition and many of his younger colleagues owe much to his ready help.

In 1855 he married a Miss Gooderson of Norwich who died in 1897. Their surviving family consists of three sons (all of whom are in the medical profession) and two daughters. The funeral took place on August 13th at Norwich Cemetery.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

Quarantine Conference.

A CONFERENCE of medical officers from the several States on the subject of future Federal quarantine laws has been held in Melbourne. The members of the conference were Dr. D. A. Gresswell, chairman of the Victoria Board of Public Health, who was subsequently appointed chairman; Dr. J. Ashburton Thompson, chief medical officer, New South Wales State Government; Dr. B. B. Ham, Commissioner for Public Health, Queensland; Mr. T. H. Lovegrove, principal medical officer, Western Australia; Dr. W. Ramsay Smith, chairman, Board of Health, South Australia; and Dr. Elkington, permanent head Department of Public Health, Tasmania. In a brief speech of welcome the Minister of Customs pointed out that the questions upon which he desired the experienced gentlemen before him to give advice were:—1. The advisability of taking over administration of the quarantine laws of the several States. 2. The provisions necessary or desirable to introduce in a Federal Quarantine Bill in regard to (*a*) prevention of the introduction of diseases from abroad, (*b*) the prevention of the dissemination of disease, and (*c*) the quarantine of animals and plants. And 3. Generally in regard to (*a*) method of administration, central staff, &c.; and (*b*) any matter in connexion with which it may seem Commonwealth legislation should deal with. The Cabinet would, however, like advice on all cognate matters which would suggest themselves to the conference. The information was required with as little delay as possible as the Government desired to proceed with a Bill before long. After the conference rose Dr. Gresswell said that it had been decided to issue no progress statements of the proceedings, as its work was only tentative and suggestive. The conference would need to get legal advice as to how far Federal powers extended in quarantine matters and to accummulate information as to machinery already existing in the States. Dr. Gresswell was doubtful whether the conference would draft a complete Federal Bill. The Minister of Customs would be supplied with a full report, and doubtless, as the outcome of the conference, a smaller body would be intrusted with the drafting of a Bill.

Lunacy in Victoria.

The report of the Inspector-General of Hospitals for the Insane in Victoria has been presented to Parliament. On Dec. 31st last there were 4570 persons on the registers, an increase of 23 for the 12 months. Of these 4349 were resident, 184 were on probation with friends, and 37 were under the care of guardians. There were 754 persons admitted during the year, a decrease of 30 as compared with 1902. In addition there were six persons confined in lunacy wards attached to public hospitals. No improvement had been made as regarded the arrangements for night nursing. The necessity for an increased night staff and suitable observation dormitories was emphasised. A trained female nurse had been appointed to the male hospital at the Kew Asylum and a part of the male division at the Beechworth Asylum had been staffed with female nurses. The ratio of persons admitted to the general population was 1 to 1603. The ratio for 1902 was 1 to 1537, and in 1901, 1 to 1596. There was one person registered as insane in the State for every 264 of the general population, as compared with one for 265 for the previous year. The recovery rate was 42·29 per cent., and the relieved rate 6·65. The recovery and relieved rates for 1902 were 43·48 and 6·90 per cent. respectively. The total expenditure of the department was £135,795 2*s.* 6*d.*, a reduction of £2897 0*s.* 11*d.* on the previous year. The actual cost of maintenance of patients was £131,042 15*s.* 3*d.*, and the average weekly cost of patients was 11*s.* 7*d.*, or, deducting the amount received from collections, a net cost of 9*s.* 10¾*d.* as against 10*s.* 4½*d.* for 1902. In conclusion, as this was the last report under the old system before the new Act came into operation, the inspector gave the following list of improvements effected during the last few years:—The introduction of trained female nurses, provision of spray baths, separation of the idiots, and imbeciles, provision for female criminal lunatics at Ararat, accommodation for female epileptics at Ballarat, increasing means of employment as a factor in treatment, systematic training of attendants, improvement in the food supply, adoption of observation dormitories with constant night supervision of epileptic and suicidal patients, and improved fire prevention methods.

Hospital Accommodation for Babies in Sydney.

The council of the Woman's Progressive Association of Sydney has collected the following information as to the hospital accommodation available in Sydney for sick infants under two years of age:—

The Sydney Hospital has no separate ward for sick babies or children, and has only eight cots; but the board has proposed plans for providing 16 cots when funds are available. At the Moorcliff branch very young children are treated for eye diseases. The Royal Prince Alfred Hospital has one ward of 16 cots exclusively devoted to the nursing of sick infants who are admitted from the age of a few weeks upwards. When the beds of the new pavilion are being allotted the question of giving further room for infants will be fully considered. St. Vincent's Hospital does not undertake the general treatment of sick infants. Lewisham Hospital receives sick children from 15 months to 14 years; but has not many beds for them and only admits younger babies when an operation is imperative, and then admits them at any age the doctor wishes. The Sydney Benevolent Asylum takes destitute children, sick or well, and at any age. In the new hospital a ward is being set apart for 36 sick children; mothers are also admitted. The Waitara Home receives sick infants at any age and has 12 cots set apart for them. Mothers are asked to remain with their sick babies. The Royal Alexandra Hospital rule for age admission is between 18 months and two years, but in urgent cases young children are taken into the hospital irrespective of ag[illegible] provision for sick babies the secretary state[illegible] tained in your letter are receiving serious [illegible] will allow it is hoped provision for the reception of young babies will be provided in the new hospital."

The council considered:—

1. That the existing and proposed accommodation was totally

inadequate to stem the appalling infant mortality, which was upwards of 5000 annually.

2. That the contemplated provision was chiefly for infants of 18 months and upwards, whereas the loss of infant life under that age was most disastrous, and discreditably reflected on existing conditions, in

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ould be specially

July 11th.

Medical News.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—The following gentlemen having passed the necessary examination and having conformed to the by-laws and regulations have been admitted Members of the Royal College of Surgeons of England and have received their diplomas:—

Fr

Percy Gully, Charing Cross Hospital; Cuthbert Murray Halsall, University College and Royal Infirmary, Liverpool; John Molyneux Hamill, M.A. Camb., B.Sc. Lond., Cambridge University and St Bartholomew's Hospital, Robert Oliver Handcock, Yorkshire College and General Infirmary, Leeds, Arthur Edgar Hay, King's College Hospital; Arthur Lewis Heiser and John Warwick Hele, L.D.S. Lond., Middlesex Hospital; Frederick Charles Hepburn, B.A. Camb., Cambridge University and London Hospital; George Wykeham Heron
Westminster Hospital, I
Cambridge University an
Owens College and Royal
Jacobson, M.D. New Yorl

Yorkshire College and General
hank Lees, St. Mary's Hospital,
, M.A. Oxon., Oxford University
as Lewis, B.Sc. Lond., University
College, Cardiff, and University College Hospital; Ernest George Robert Lithgow, St. Mary's Hospital; John Henry McAllum, Cambridge University and London Hospital, Edgar John Cecil McDonald, L.M. & S. Bombay, Bombay University, St. Thomas's and King's College Hospitals; George Hagarty McLaren, M.D. Tor., Toronto University and University College Hospital; John Borland McVail, London Hospital, Mahmoud
Maher, Cairo and Guy's Ho
sity College Hospital, Phil
pital; William Norman M
Meek, Owens College and I
Thomas's Hospital, Robert
Lawton Moss, St. Thomas's
Cambridge University and
Mottram, Guy's Hospital,
University College and Roy
Toronto University; Hamish

UNIVERSITY OF CAMBRIDGE.—The examiners in tropical medicine and hygiene (Sir Patrick Manson, Major Ronald Ross, and Dr. Nuttall) have issued the following list of successful candidates for the University Diploma in Tropical Medicine and Hygiene:—

A. R. Cleveland, A. R. J. Douglas, G. Elliott, P. N. Gerrard, C. M. Heanley, J. C. B. Statham, C. A. Suvoong, and J. C. Thompson.

FOREIGN UNIVERSITY INTELLIGENCE.—*Amsterdam:* Dr. MacGillavry has been recognised as *privat-docent* of Surgery and Dr. W. M. de Vries as *privat-docent* of Ophthalmology.—*Berlin:* Dr. Erich Hoffmann has been recognised as *privat-docent* of Dermatology and Dr. Max Westenhöffer as *privat-docent* of Pathological Anatomy.—*Cologne (Academy for Practical Medicine):* Dr. Borst of Würzburg has been appointed to the chair of Pathological Anatomy with charge of the Pathological Institute of the Cologne city hospitals.—*Heidelberg:* Dr. Jussuf Bey Ibrahim of Cairo has been recognised as *privat-docent* of Children's Diseases.—*Kiel:* Dr. Robert Rossle has been recognised as *privat-docent* of Pathological Anatomy.—*Lyons:* Dr. Fabre has been appointed to the chair of Clinical Midwifery in place of the late Dr. Fochier.—*Nancy:* Dr. Pierre Parisot has been appointed to the chair of Forensic Medicine in succession to the late Dr. Demange.—*Odessa:* Dr. F. Bukoyemski has been recognised as *privat-docent* of Midwifery and Gynæcology.—*Prague (Bohemian University):* Dr Franz Procházda has been recognised as *privat-docent* of Internal Medicine.—*Tubingen:* Dr. Wilhelm Specht has been recognised as *privat-docent* of Psychiatry and Dr. Fleischer as *privat-docent* of Ophthalmology.—*Vienna:* Dr. Eiselsberg has for family reasons decided to decline the offer of Professor König's chair in Berlin. Dr. Heinrich Peham has been recognised as *privat-docent* of Midwifery and Gynæcology, Dr. Friedrich Luithlen as *privat-docent* of Dermatology, and Dr. Pick as *privat-docent* of Medical Chemistry.—*Würzburg:* Dr. Mayr has been recognised as *privat-docent* of Internal Medicine.

CORNWALL CONVALESCENT HOME FOR MEN.—The recently issued twelfth annual report of the Cornwall Convalescent Home for Men at Perranporth states that 127 patients were admitted during 1903, against 117 in 1902. The average stay of each case in the home was 23 days, the cost per head being £2 9s. 8d. This home was founded by Mr. Passmore Edwards and during the last 12 years 1169 convalescent patients have been admitted.

ST. PETERSBURG WATER FILTERS.—The *Novoe Vremya* reports that a committee consisting of medical men and
Mr. A. N. Oppenheim,
July 25th and were
's had not been cleaned
for 11 years and they contained such a depth of mud that water passing through it must necessarily be rendered more impure instead of being cleaned. The committee recommends more frequent cleaning and more filters.

UNIVERSITY OF YURIEV.—V. M. Bechtereff, Professor and Academician of the Imperial Military Medical Academy, has been elected honorary member of the Imperial University of Yuriev in acknowledgment of his exceptional scientific services. Professor Bechtereff, says the *Novosti*, is

Infirmary for Children, to the Norfolk and Norwich Eye Infirmary, to the Norwich City Asylum, and, as already mentioned, to the Bethel Hospital for the Insane. He was a member of a variety of medical societies, British and foreign, as well as a foreign associate of the French Academy of Medicine. His most important published work was a treatise on Aphasia which gained the Alvarenga prize of the French Academy of Medicine; the first edition, the title of which was "Aphasia, or Loss of Speech, and the Faculty of Articulate Language," appeared in 1870; the second edition, much enlarged, in which the title was changed to "Aphasia and the Localisation of the Faculty of Speech," was issued in 1890. He was also the author of "The Idiot and his Place in Creation," as well as of contributions to THE LANCET and other periodical literature of the profession. He sat in the Norwich town council for the old Third Ward and in 1872 served the office of sheriff, as his father had done before him, fulfilling the duties of the position so well that special reference to his merit in this capacity was made in the votes of thanks awarded to him at the end of his term. During his shrievalty the Social Science Congress was held in Norwich and Sir Frederic Bateman took an active part in the discussions. He read a paper to the members of the Churchman's Club on Darwinism tested by Scientific Researches in Language, declaring himself to be altogether opposed to the theories of the evolutionists. In 1892 he received the honour of knighthood. In 1893 the University of Aberdeen conferred on him the degree of LL.D.

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Cabinet would, however, like adv
which would suggest themselves
information was required with as l
the Government desired to proceed
After the conference rose Dr. Gressw
decided to issue no progress statem
as its work was only tentative and
ference would need to get legal
Federal powers extended in quara
accummulate information as to machi
in the States. Dr. Gresswell was doubt
ference would draft a complete Federal
of Customs would be supplied with a full
less, as the outcome of the conference,
be intrusted with the drafting of a Bill.

Lunacy in Victoria.

The report of the Inspector-General of
Insane in Victoria has been presented
Dec. 31st last there were 4570 persons on
increase of 23 for the 12 months. Of
resident, 184 were on probation with frie
under the care of guardians. There were
mitted during the year, a decrease of 30 as
1902. In addition there were six persons con
wards attached to public hospitals. No in
been made as regarded the arrangements for
The necessity for an increased night staff and
vation dormitories was emphasised. A traine
had been appointed to the male hospital
Asylum and a part of the male division at th
Asylum had been staffed with female nurse
of persons admitted to the general popula
1603. The ratio for 1902 was 1 to 1537, and
to 1596. There was one person registered as
State for every 264 of the general population,
with one for 265 for the previous year. The
was 42·29 per cent., and the relieved rate 6
recovery and relieved rates for 1902 were 43·48 a
cent. respectively. The total expenditure of the
was £135,795 2*s*. 6*d*., a reduction of £2897 0*s*. 1
previous year. The actual cost of maintenance
was £131,042 15*s*. 3*d*., and the average week
patients was 11*s*. 7*d*., or, deducting the amount
from collections, a net cost of 9*s*. 10¾*d*. as against
for 1902. In conclusion, as this was the last report
old system before the new Act came into opera
inspector gave the following list of improvements
during the last few years:—The introduction of traine
nurses, provision of spray baths, separation of the
and imbeciles, provision for female criminal lunat
Ararat, accommodation for female epileptics at Ba
increasing means of employment as a factor in treat
systematic training of attendants, improvement in th
supply, adoption of observation dormitories with con
night supervision of epileptic and suicidal patients.
improved fire prevention methods.

Hospital Accommodation for Babies in Sydney.

The council of the Woman's Progressive Association Sydney has collected the following information as to the hospital accommodation available in Sydney for sick infants under two years of age:—

> The Sydney Hospital has no separate ward for sick babies or children, and has only eight cots; but the board has proposed plans for providing 16 cots when funds are available. At the Moorcliff branch very young children are treated for eye diseases. The Royal Prince Alfred Hospital has one ward of 16 cots exclusively devoted to the nursing of sick infants who are admitted from the age of a few weeks upwards When the beds of the new pavilion are being allotted the question of giving further room for infants will be fully considered St. Vincent's Hospital does not undertake the general treatment of sick infants. Lewisham Hospital receives sick children from 15 months to 14 years; but has not many beds for them and only admits younger babies when an operation is imperative, and then admits them at any age the doctor wishes. The Sydney Benevolent Asylum takes destitute children, sick or well, and at any age. In the new hospital a ward is being set apart for 36 sick children; mothers are also admitted. The Waitara Home receives sick infants at any age and has 12 cots set apart for them. Mothers are asked to remain with their sick babies. The Royal Alexandra Hospital rule for age admission is between 18 months and two years, but in urgent cases young children are taken into the hospital irrespective of age. In answer to suggested
> provision for sick babies the [illegible] "The suggestions con-
> tained in your letter are rece[illegible] funds
> will allow it is hoped provision [illegible] es will
> be provided in the new hospital."

The council considered:—

1. That the existing and proposed accommodation was totally

UNIONIST GAZETTE ASSOCIATION, State Printers Somerville N J, U S A

Twenty seventh Annual Report of the Board of Health of the State of New Jersey and Report of the Bureau of Vital Statistics 1903 Price not stated

UNIVERSITY CORRESPONDENCE COLLEGE Burlington House Cambridge (London Office 32 Red Lion square Holborn W C)

The University Tutorial Series Matriculation Directory No XXXVII June 1904 With articles on Text books Price 1s net

UNIVERSITY PRESS Cambridge (C J CLAY AND SONS Ave Maria-lane E C and H K LEWIS Gower street W C)

Biometrika A Journal for the Statistical Study of Biological Problems Edited in consultation with Francis Galton by W F R Weldon Karl Pearson and C B Davenport Vol III Parts II and III March and July 1904 (issued July 30th 1904) Price 20s net

UNWIN, T FISHER Paternoster square E C

Motherhood By L Parry Truscott author of The Poet and Penelope As a Tree Falls &c Price not stated.

WHITAKER J, AND SONS LIMITED 12 Warwick lane Paternoster-row E C

Classical and Foreign Quotations Compiled edited and told with their references translations and indexes by W Francis H King M A Oxford Third edition revised and rewritten. Price 6s net

Appointments.

Successful applicants for Vacancies Secretaries of Public Institutions, and others possessing information suitable for this column are invited to forward to THE LANCET *Office directed to the Sub Editor not later than 9 o clock on the Thursday morning of each week such information for gratuitous publication*

ABRAHAMS BERTRAM LOUIS F R C P Lond has been appointed Examiner in Physiology to the Conjoint Board of the Royal College of Physicians of London and the Royal College of Surgeons of England

GRÜNBAUM A S F M D Cantab F R C P Lond has been appointed Professor of Pathology and Bacteriology at Liverpool University

MONTGOMERY ALEXANDER M B B S R U I has been appointed Medical Attendant to the Royal Irish Constabulary for the C District of Belfast.

MURRAY H L M B B S Aberd has been appointed House Surgeon to the Liverpool Hospital for Women

[illegible] M R C S Eng has been appointed [illegible] Factory Act for the Havant District [illegible]

PERRY S HERBERT M D Lond M B Ch B Birm M R C P has been appointed Assistant Physician to the General Hospital Birmingham

RIC[illegible] M R C S Eng has been [illegible] ic Physician to the Lowey [illegible]

SMITH WILLIAM *has been appointed Medical Officer for the Hawkes*bury Alderly Badminton and Acton Turville districts by the Chipping Sodbury (Gloucestershire) Board of Guardians

SOPER, GERALD MORGAN L R C P Lond M R C S has been appointed Medical Officer and Public Vaccinator for the Dartmouth and Dittisham Districts by the Totnes (Devon) Board of Guardians

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index)

BIRKENHEAD AND WIRRAL CHILDREN'S HOSPITAL.—House Surgeon. Salary £100 per annum with board residence and laundry

BRIGHTON SUSSEX COUNTY HOSPITAL.—Third House Surgeon Salary £50 per annum with board and residence

BRIGHTON THROAT AND EAR HOSPITAL, Church street Queen s road —Non Resident House Surgeon for six months renewable Salary at rate of £75 per annum

CARLISLE AND PROVIDENT DISPENSARY —Resident Medical Officer *Salary £150 per annum with apartments (not board)*

CHELTENHAM GENERAL HOSPITAL.—Assistant House Surgeon unmarried. Salary £92 per annum with board, lodging and washing

COUNTY OF LONDON —Woman Inspector in the Public Health Department under the Midwives Act, 1902. Salary £150 rising to £200

DOUGLAS ISLE OF MAN NOBLE'S GENERAL HOSPITAL AND DISPENSARY —Resident House Surgeon unmarried Salary £82 per year with board and washing

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN Shadwell E —House Surgeon for six months Honorarium £25 with board residence &c

EXMINSTER DEVON COUNTY ASYLUM —Assistant Medical Officer Salary £125 rising to £155 with board and lodgings

GLASGOW ROYAL HOSPITAL FOR SICK CHILDREN —Resident House Surgeon Salary at rate of £50 per annum with board and laundry Also Assistant at Dispensary for six months Salary at rate of £100 per annum

GREAT YARMOUTH HOSPITAL —House Surgeon Salary £90 per annum with board lodging and washing

HAMPSTEAD GENERAL HOSPITAL —Resident Medical Officer for six months Salary at rate of £120 per annum with rooms coals and gas

LANCASTER ROYAL INFIRMARY —House Surgeon unmarried Salary £100 per annum with residence board attendance and washing

LIMPLEY STOKE, NEAR BATH OPEN AIR SANATORIUM FOR CONSUMPTIVES.—Resident Medical Officer Salary £200 per annum rising to £300

LIVERPOOL INFIRMARY FOR CHILDREN —Assistant House Surgeon for six months Salary £30 with board and lodging

MACCLESFIELD GENERAL INFIRMARY —Junior House Surgeon Salary £150 per annum with board and residence

MANCHESTER CHILDREN'S HOSPITAL —Junior Resident Medical Officer unmarried for six months Salary at rate of £80 a year with board and lodging

NEWCASTLE-ON TYNE HOSPITAL FOR SICK CHILDREN —Resident Medical Officer Salary £100 with board lodging and laundry

READING ROYAL BERKSHIRE HOSPITAL.—Assistant House Surgeon. Salary £60 per annum with board lodging and washing

ROTHERHAM HOSPITAL AND DISPENSARY —Senior House Surgeon Salary £110 per annum with rooms commons and washing

ST PETER'S HOSPITAL FOR STONE &c *Henrietta street Covent* garden W C —Junior House Surgeon for six months Salary at rate of £50 a year with board lodging and washing

STOCKPORT INFIRMARY —Junior Assistant House Surgeon for six months Salary £140 per annum with board washing and residence

UNIVERSITY OF LONDON —Scientific Assistant in Pathology Salary £.0 per annum

WEST BROMWICH DISTRICT HOSPITAL.—Resident Junior House Surgeon Salary £50 per annum with board lodging washing and attendance

WEST LONDON HOSPITAL, Hammersmith road W —One House Physician and three House Surgeons for six months Board lodging and laundry provided

WINCHESTER ROYAL HANTS COUNTY HOSPITAL.—House Surgeon unmarried Salary £65 per annum rising to £75 with board, residence &c

Births, Marriages, and Deaths.

BIRTHS

BISI[illegible]

GITTINGS —On August 10th at Fardley crescent Earl s court the wife of Surgeon C B Gittings M B Lond R N of a son

MARRIAGES

KERR—MILLIGAN [illegible]
D nscore b [illegible]
Maxwelton [illegible]
brother in la [illegible]
Dunscore P [illegible]
daughter of John Milligan of Merkland Dumfries

LORENA—WRAY —On the 6th August, at St. Saviour s Church Maida Vale W by the Rev Canon Sayers A Charles Lorena L R C P I L S I Sierra Leone Government Railway to Millicent Edith daughter of Hugh A Wray Esq Hyderabad, Deccan India.

DEATH

STEWART —On August 16th 1904 at Dunmurry " Sneyd Park near Clifton Clos. Hamilton Stewart, Assistant Paymaster R N (retired) younger son of James Stewart B A F R C P I I

N B —A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths

Notes, Short Comments, and Answers to Correspondents.

STREET NUISANCES.

AT the last meeting of the city council of Manchester Dr. C. G. L. Skinner drew attention to some of the common, and therefore all the more objectionable, nuisances that disgrace our streets. He asked if the watch committee had observed how great and growing was the nuisance from dirty paper blowing about the streets and the danger to the community from broken bottles, principally mineral water bottles. He called the attention of the watch committee to it rather than the sanitary committee because it was a matter needing prevention more than cure. The tradesmen's errand boys are responsible for the greater part of the paper nuisance, and there ought to be some mode of impressing on them that they must not scatter waste paper broadcast. Nowadays there is so much disregard of authority that errand boys respect it no more than they would have feared the "curate" in the *Private Secretary*, when he threatened to give "a good, hard knock." The broken bottle nuisance is a danger that ought to be treated seriously but the by-laws against it are too often a dead letter. Nearly every country lane and open space accessible to the public are dangerous from the same cause.

THE FOUNDER OF "THE LANCET."

Dr. Stanley B. Atkinson, honorary secretary of the Medico-Legal Society, in reading some old articles on Medical Evidence in the Inner Temple library, recently came across the following interesting reference to the founder of THE LANCET in the *Monthly Law Magazine*, vol. viii. (1840), under the heading "The Present State and Conduct of Parties" (i.e., political), and he sends it to us thinking that we may care to add it to the archives of the history of THE LANCET.

> Mr. Wakley has a pretty vituperative manner of his own, even when he does not descend to an imitation of Mr. O'Connell, and a skill at hitting the right nail on the head that is very painful when the head chances to be endowed with a sensorium. To him we leave it to deal with such epithets as "vulgar and unfounded taunts," and "coarse and ludicrous sarcasms"; the coroner for Middlesex is just the man to tame an Edinburgh reviewer; we are content to know how bitterly and pungently the sarcasm applies, even though we have not "the equivocal merit of having invented it."—P. 58.

PRACTICE IN ONTARIO.

To the Editors of THE LANCET.

SIRS,—I am anxious to know if holders of the triple qualification of Scotland are entitled to practise in Ontario. I am told that I should be required to pass the licensing examination of that State before practising there. I understand that any British qualification entitled one to practise in the British Empire.

I am, Sirs, yours faithfully,

August 13th, 1904. L.R.C.P. & S. Edin.

*** Our correspondent will find information about practice in Canada on p. 651 of THE LANCET of Sept. 5th, 1903. In Ontario registration by the council of the College of Physicians and Surgeons of Ontario is necessary for anyone who wishes to practise and it is optional for the council to admit to registration all persons who are duly authorised to practise medicine, surgery, and midwifery in the United Kingdom and Ireland upon terms which the council may deem expedient.—ED. L.

RABBITS AS "SAND-BAGS."

To the Editors of THE LANCET.

SIRS,—A day or two ago I was called to a little boy who had broken [illegible] in a harvest field. I found the injured limb [illegible] between two freshly-killed rabbits which made [illegible] and also, as the lady who arranged them truly remarked, tended to keep the limb warm. This treatment might be quoted in support of the efficacy of "a hair of the dog that bit him."

I am, Sirs, yours faithfully,

Silverton, August 16th, 1904. O. CLAYTON-JONES, M.B. Oxon.

THE SPREAD OF SMALL-POX.

A WOMAN named Clara Powell was recently summoned at Lincoln for exposing a child in her charge suffering from small-pox without taking proper precautions to prevent the spread of the disease on July 30th. The deputy town clerk (Mr. T. W. Page) appeared to prosecute on behalf of the sanitary authority. The defendant, he said, was in receipt of relief from the board of guardians for the purpose of supporting a child named George Barty, 12 years of age. On July 30th the sanitary inspector saw the child and found him to be suffering from small-pox in the early stage of the disease. He had the child taken home in the ambulance van and distinctly told the defendant that he was suffering from small-pox and was in no circumstances to be allowed to leave the house. On the evening of the same day, however, the child was found selling matches in the smoke-room of a licensed house. The offence could be made an indictable one but the sanitary authority had proceeded under the Public Health Act, under which the penalty was £5. The defendant admitted the offence and was fined the full penalty of £5, the alternative being to go to prison for a month. 14 days were allowed for payment. This story is a striking example of how careless, ignorant, or wilful people may damage the community for the sake of a few halfpence of profit, and further the futility of relying upon the obedience of such people instead of at once removing the patient to an isolation hospital.

AN APPEAL ON BEHALF OF MISS E. B. PELLATT, L.S.A.

To the Editors of THE LANCET.

SIRS,—May I enlist your kind help in bringing the following facts to the notice of the readers of THE LANCET? Miss E. B. Pellatt, L.S.A., who became qualified in 1893, decided in 1895 to take up the work of a medical missionary. She was a member of the Guild of St. Luke and having studied Arabic at Zanzibar joined the St. Philip's mission at Cape Town under the Society of St. John the Evangelist in 1896. Here she worked until February, 1903, when she was compelled to return to England on account of her health, but hoping to be able to return to work in December. Optic neuritis of both eyes, however, set in and in February of the current year she was completely blind of the right eye and had but little more than perception of light in the left. She is thus shut out from following her profession, her family are unable to help her, and the sphere of work for her gaining a livelihood by her own efforts must be very limited. It is therefore hoped that her professional brothers and sisters will do what they can to help her. Contributions may be sent to Colonel Francis H. Welch, F.R.C.S., 8, Brandram-road, Lee, S.E. The following have already responded to the appeal. I am, Sirs, yours faithfully,

Welbeck-street, W., August 13th, 1904. E. F. DRAKE-BROCKMAN.

	£	s.	d.		£	s.	d.
Mr. George L. St. George	1	0	0	Rev. A. W. Tudball ...	1	10	0
Dr. Florence Armitage ...	0	10	6	Dr. J. A. Armitage ...	1	1	0
Dr. Mary Cruikshank ...	0	10	6	Rev. C. H. Norton	1	1	0
Mrs. Stanley Boyd, M.D.	10	0	0	Dr. H. E. Symes-Thompson	1	1	0
Dr. E. L. Fleury	1	1	0	Mr. George Cowell... ...	1	1	0
Miss M. Beatrice Counsell...	0	5	0	Surgeon-Colonel F. H. Welch	2	2	0
Dr. R. Braithwaite... ...	1	1	0	Lieutenant-Colonel E. F. Drake-Brockman... ...	1	1	0
Rev. E. F. Russell	2	0	0	Mrs. Wormald...	3	0	0
Rev. Dr. and Mrs. F. W. Sutton	3	0	0	Mr. W. A. Satchell... ...	1	1	0
Mrs. R. P. Wintle	2	2	0	Dr. J. F. W. Tatham ...	1	1	0
Rev. H. Guy Latham ...	1	1	0	Mr. J. Wyatt Pratt ...	2	2	0
Mrs. J. B. Butler	10	0	0	Dr. J. Gutch	2	2	0
Surgeon W. E. Marshall, R.N....	0	10	6	Dr. T. Morton	5	0	0
Lieutenant-General R. W. Lowry...	1	1	0	Mr. E. H. Addenbrooke	3	3	0

A QUESTION FOR ARGUMENT.

A CORRESPONDENT under the name of "Fairplay" propounds the following hard case:—Dr. S. was a temporary assistant to Dr. B. Dr. B. in order to remove his own bicycle put Dr. S.'s bicycle close to the waiting-room door which was left open. People passing in the street could see the bicycle (Dr. S.'s) which was the best in the town. Dr. S.'s bicycle was stolen on that very day. Has Dr. S. any claim on Dr. B. from whose premises he lost his machine?

We do not suppose that the law would support Dr. S., but Dr. B. might still be held morally liable at any rate for part of the loss.

A METHOD OF REMOVAL OF THE POST-MORTEM ODOUR FROM THE HANDS.

To the Editors of THE LANCET.

SIRS,—Perhaps the following may interest some of your readers. A fortnight ago after performing a post-mortem examination I had occasion to rub my hands with chloroform to remove some rubber plaster and to my surprise found that the unpleasant smell on my hands was completely gone. I have done the same to-day after a post-mortem examination with a like result. I have tried many methods of removing the smell but I have found none so effective as this.

I am, Sirs, yours faithfully,

August 16th, 1904. HEATON C. HOWARD.

*** The method may give rise to transient irritation.—ED. L.

AN INCOME-TAX QUERY.

To the Editors of THE LANCET.

SIRS,—I am an outdoor assistant at a salary of £220 per annum—i.e., I have to pay weekly rent for rooms situated in a village one and a half miles from the house of my principal. His plate is on the gate but otherwise the house is not his. I am now asked to pay income-tax. Before coming here I was an indoor assistant—i.e., living at a branch at £160. I reckon that board and lodging here cost me £60 per annum—i.e., I am no better off than previously, but I had no income-tax to pay before. Am I now liable to be taxed on the £60? My principal no doubt claims abatement on my salary. A brief reply in your correspondence column will oblige.—I am, Sirs, yours faithfully,

A. B. C.

August 16th, 1904.

*** Yes, our correspondent must pay.—ED. L.

◆

Sophos.—Without knowing the exact duties assigned to our correspondent's office we are unable to help him very definitely. Probably the authorities consider that the treatment of persons who have fallen into the harbour is a part of his duties As to the other case in all probability the injured party is liable The whole state of matters as regards payment of medical men called by the police to see patients is most unsatisfactory In London, at any rate no compulsion rests on any medical man other than a police surgeon to answer the summons of a constable to see a patient But the police authorities will generally pay a fee of either 3*s* 6*d* or 7*s* 6*d* according as the call is in the day or the night The same fees have been recovered for similar services in various places in England But as a rule it may be said that when any medical man is called to a street accident, if he does not go he is stigmatised as inhuman and if he does go no one is liable for his fee

Monaco—Permission to practise in the principality is granted solely by favour of the Prince of Monaco Our correspondent can make an application through the Consul General in London 37, Conduit-street Bond street W

Calcar—Probably
Anti Calcairo
Regent street W

Medical Diary for the ensuing Week.

OPERATIONS

METROPOLITAN

MONDAY (22nd)—London (2 P.M.)
Thomas's (3.30 P.M.) St George's
Middlesex (1.30 P.M.) Westmin
Samaritan (Gynæcological by I

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.) and the Central London Ophthalmic Hospitals operations are performed daily

LECTURES, ADDRESSES, DEMONSTRATIONS, &c

MONDAY (22nd)—POST GRADUATE COLLEGE (West London Hospital Hammersmith road, W)—5 P.M. Dr Russell: Treatment of Nephritis

TUESDAY (23rd)—POST-GRADUATE COLLEGE (West London Hospital Hammersmith road, W)—3.30 P.M. Dr Davis Demonstration in Medical Wards

WEDNESDAY (24th)—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith road W)—5 P.M. Mr Dunn Tobacco

est London Hospital
: Demonstration in

t London Hospital
Surgical Cases.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff It is urgently necessary that attention be given to this notice

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication

We cannot prescribe or recommend practitioners

Local papers containing reports or news paragraphs should be marked and addressed To the Sub Editor

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager*

We cannot undertake to return MSS not used

MANAGER'S NOTICES.

THE INDEX TO THE LANCET

THE Index to Vol I of 1904, which was completed with the issue of June 25th, and the Title page to the Volume were given in THE LANCET of July 2nd

VOLUMES AND CASES

VOLUMES for the first half of the year 1904 are now ready Bound in cloth gilt lettered, price 18*s*, carriage extra

ear s numbers are also ready
Cl y post 2*s* 3*d*
to the Manager, accompanied
by remittance

TO SUBSCRIBERS

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423 Strand W C are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c, should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices

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Subscriptions (which may commence at any time) are payable in advance Cheques and Post Office Orders (crossed London and Westminster Bank, Westminster Branch) should be made payable to the Manager, Mr CHARLES GOOD, THE LANCET Offices, 423, Strand London, W C

METEOROLOGICAL READINGS

(*Taken daily at 8.30 a m by Steward's Instruments*)

THE LANCET Office Aug 18th, 1904

Date.	Barometer reduced to Sea Level and 32° F	Direction of Wind.							Remarks at 8.30 A.M.
Aug 12	30 01	W		123	71	52	57	61	Cloudy
" 13	30 15	WSW		119	74	54	56	62	Fine
" 14	29 83	S W	0·03	114	72	59	58	64	Cloudy
" 15	29 72	W	0·01	120	72	59	58	64	Stormy
" 16	30 12	W	0·07	117	70	55	55	59	Overcast
" 17	29 86	S W	0 22	73	79	57	57	58	Raining
" 18	29 78	N W		107	63	54	54	58	Clear

During the week marked copies of the following newspapers have been received — *Aberdeen Daily Journal, Aberdeen Free Press (Weekly) Westminster Gazette Carlisle Journal, Dublin Even ing Mail, Daily News Surrey Advertiser Bristol Mercury Dublin Express Morning Post Sanitary Record, Local Government Chronicle Mining Journal, Hert ry Yorkshire Daily Observer,*

Communications, Letters, &c., have been received from—

A.—Mr. E. Arnold, Lond.; Dr. Stanley B. Atkinson, Lond.; Mr. J. Astier, Asnières; Anderson's College Medical School, Glasgow; A. A. B.; Messrs. Allen and Hanburys, Lond.

B.—Mr. Walter Burns, Belfast; Mr. J. W. Benson, Lond.; Dr. Ralph Browne, Bournemouth; Messrs. Burroughs, Wellcome, and Co., Lond.; T. B. Browne, Ltd., Lond.; Dr. W. C. Brown, Lond.; Mr. C. L. Bedford, Lond.

C.—Dr. Myer Coplans, Stroud; Dr. A. H. Carter, Birmingham; Mr. Joseph H. Churchill, Wembley; "Calcar"; Cornwall County Council, Chairman of the Sanitary Committee of; Dr. C. J. Cullingworth, Lond.; Mr. Thomas P. Codd, Drumcondra; Messrs. E. Cook and Co., Lond.; Messrs. Cuxson, Gerrard, and Co., Birmingham; Carlisle Dispensary, Secretary of; Cheltenham General Hospital, Secretary of; C. J.; Sir W. J. Collins, Lond.

D.—Messrs. Down Bros., Lond.; Messrs. Duncan, Flockhart, and Co., Edinburgh; Mr. M. L. Dobbie, Lond.; Messrs. G. L. Daube and Co., Frankfurt; Mr. H. Percy Dunn, Lond.; Mr. A. Duncan, Lond.; Mr. W. T. Davies, Llananno.

E.—Mr. T. Crisp English, Lond.; Miss F. E. Turle Evans, Lond.

F.—Major G. H. Fink, Lond.; Mr. Maurice Faure, Lamoulu; Dr. A. Mearns Fraser, Portsmouth; F. T. P.; Faulkner's Calf Vaccine Institution, Lond.

G.—Mr. H. Wippell Gadd, Lond.; Mr. John Good, Aston Court; Mr. Arnold J. Greene, Wigan; Dr. Albert S. Grünbaum, Liverpool; General Infirmary, Macclesfield, Secretary of; Mr. George Gresswell, Grimsby.

H.—Mr. W. Hurst, Tadcaster; Dr. L. K. Herschel, Lond.; Mr. James B. Hogg, Goodna, Queensland; Mr. J. Heywood, Manchester; H. C. C.; Hastings, Town Clerk of.

I.—Messrs. J. Idiens and Sons, Lond.

J.—Dr. Edward Jepson, Durham; J. R.

K.—Captain F. Kiddle, R.A.M.C., Lond.; Messrs. H. and T. Kirby and Co., Lond.; Messrs. F. Kraser and Co., Lond.; Messrs. R. A. Knight and Co., Lond.

L.—Mr. H. Lamond, Glasgow; Messrs. Lee and Nightingale, Liverpool; L.R.C.P. & S. (Edin).; Leeds University, Registrar of; L. J.

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A Presidential Address

ON

PREVENTIVE WORK IN THE TROPICS.

Delivered before the Tropical Section of the Congress of the Royal Institute of Public Health held at Folkestone, July, 1904.

BY W. J. R. SIMPSON, M.D. ABERD.,
F.R.C.P. LOND.,

PROFESSOR OF HYGIENE, KING'S COLLEGE, LONDON; AND LECTURER ON TROPICAL HYGIENE AT THE LONDON SCHOOL OF TROPICAL MEDICINE.

GENTLEMEN,—My first duty is to convey to you my cordial thanks for the honour you have conferred on me in inviting me to be the President of the Tropical Section of this important Congress. Without further remark I shall proceed to the subject of my address—viz., Preventive Work in the Tropics.

HISTORICAL RÉSUMÉ OF ADVANCES IN TROPICAL HYGIENE.

The history of preventive medicine in the tropics so far as the British possessions are concerned is similar to that of Great Britain but differs in being many chapters behind. To a limited extent the practice of preventive medicine in the tropics has been based on the results of general observations and experience on the spot guided by the tenets which have held sway in England, the underlying principle of which is that cleanliness in its widest sense is the chief sanitary law. It is a good foundation to work upon and if later discoveries show that it does not cover the whole field of preventive medicine there can be little doubt it includes a very large portion. Before Pasteur's work revealed to us the process and meaning of putrefaction and fermentation and led to those epoch-making discoveries which resulted in the recognition of many of the bacterial agents of disease, the sanitarians of the time held that the best way to secure the well-being of the community and freedom from disease was the practice of measures having for their aim the purity of air, water, food, and environment. The success which attended action based on this principle is written large in the records of the great changes and improvements in the healthiness of localities [illegible] man's grave." [illegible] nce when the [illegible] the domain of [illegible] d some of the [illegible] es. They are [illegible] army and the army surgeon, the latter of whom in the early days of colonial enterprise and expansion had charge of the troops and of the small white population who formed the vanguard of that large body of our countrymen who now spend so much of their lives in our great tropical colonies and dependencies. In the early days of our occupation of the West Indies, fever, scorbutic dysentery, and phthisis played such havoc with the troops that it was estimated that the lifetime of a regiment 1000 strong was about five years. This mortality was at first attributed to the climate until experience showed it to be due to removable causes. It occurred under the following conditions. The food of the soldiers consisted mainly of salted meat with but a scanty supply of fresh vegetables, the drinking water was taken from polluted sources, the barracks were built on unhealthy sites and were ill-constructed, they were without adequate ventilation and were overcrowded, the cubic space for each man being about 250 feet. The sanitary arrangements were foul and often of the most primitive character. These conditions, associated with a want of knowledge as to the necessity of adapting the customs followed in a cold climate in regard to food, drink, dress, and exercise to those most suited for a tropical country, accounted in a large degree for the deplorable state of ill-health. The mortality for Europeans in the 20 years from 1817 to 1836 was in Jamaica 121 per 1000, in Trinidad 106, in Barbadoes 55, and in St. Lucia 122. When the conditions mentioned were improved a steady decline took place in the death-rate. In India the death-rate of the soldier has also fallen from 80 per 1000 to 16 per 1000. A marked decrease in mortality has also occurred among the civil population in a few of the principal towns of India owing largely to a greater freedom from cholera and fever brought about by the introduction of pure water-supplies, good drainage, and supervision of the sanitary arrangements by specially appointed medical officers. There has also been a great decline in the death-rate of European officials in the west coast of Africa, which in the early part of last century was worse than that in the West Indies, and there can be little doubt that, with a continuance of the policy lately introduced by Sir Matthew Nathan and Sir William McGregor, there will be further improvement.

That is one aspect of preventive medicine in the tropics and a very pleasing aspect it is as far as it goes. It shows what can be accomplished in special communities by sanitary organisation and administration and it is an indication of that which can be done on a much larger scale. The next step is that the work which has been so beneficial to a few individuals and to special communities shall be extended on [illegible] use of the discoveries which have been made from time to time by the pursuit of researches in the laboratory by experimental work, by epidemiological inquiries, and by investigation into outbreaks. Each of these methods in its own way advances our knowledge concerning the causation of disease. To-day laboratory methods are more in the foreground than the others, and at the present moment deservedly so because of the conspicuous successes which have followed activity in this particular line of research.

It is not surprising that the microscope and the laboratory should hold the position they do in tropical medicine, for the advances achieved by workers making use of them are little short of marvellous. I need only bring to your memory the discovery of the cholera bacillus by Koch; of the malarial parasite by Laveran and of its life cycle in the mosquito by Manson and Ross; of the micrococcus of Malta fever by Bruce; of the trypanosome of sleeping sickness by Castellani and Bruce; of filaria by Lewis and its life history by Manson; of the plague bacillus by Kitasato and Yersin; of the Leishman-Donovan bodies by Leishman and Donovan found in cases diagnosed as malarial cachexia with enlarged spleen and which differentiates one of those unclassified fevers which Crombie drew attention to some years ago. Then there are the numerous discoveries connected with ankylostomiasis, bilharzia, guinea worm, and other tropical diseases. This incomplete list represents achievements of the highest order which it may be taken for granted are but forerunners of further successes. With such brilliant *results there is no chance of this side of preventive* medicine languishing, except so far as it needs money and organisation for its further development. That such developments are needed is patent on every side, for we are very far from knowing all that can be learnt from laboratory methods in any of these diseases and there are hosts of other diseases still to be studied. But while appreciation of this line of research cannot be too great it must not be forgotten that the modes by which some of the most important epidemic diseases spread and the general laws which they follow were ascertained by field work as distinguished from laboratory work and before the causal agent or microbe of these diseases was discovered. I need only refer to cholera, typhoid fever, and dysentery, whose relations to contaminated water were so fully established by other than laboratory methods and which led to great practical reforms. Each method has its particular function and the true position of laboratory work is as a part of preventive medicine but not the whole. Progress will best be secured by making use of all the methods available and by bringing into practical use the knowledge which they furnish us with.

Next in rank to the discoveries of Jenner, Pasteur, and Lister I place those of Ross and Manson founded on that of Lister. To my mind the discoveries connected with malaria mark as great an epoch in the history of preventive medicine as those of Pasteur at an earlier date in that they deal with a disease which is universal in the tropics and they open a new field of research which is likely to throw light on a similar class of diseases. All our former ideas on the

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have always shown interest in the welfare of those under their charge, but whose difficulty, no doubt, at first will be ways and means. It is not in West Africa alone, however, that we need such a service. We need, as I stated in my address at Aberdeen in 1900, an imperial or colonial sanitary service. Towards the furtherance of a sanitary service of this kind the establishment of the schools of tropical medicine and hygiene in London was the first step. It renders the creation of such a service possible. With the necessary adjustment for local circumstances a sanitary organisation should be extended to all our tropical colonies that are in an advanced and settled condition. If this organisation were supplemented at the Colonial Office by an advisory board having the present distinguished medical adviser as its president, whose duties would be to read the sanitary reports and advise the Government on the many problems which arise in connexion with health matters, we should be on a fair way to being in a position to apply in a systematic and scientific manner practical measures based on the discoveries in malaria and other tropical diseases to their prevention.

ABSTRACT OF

A Clinical Lecture

ON

THE DIAGNOSIS OF OSTEO-SARCOMA OF THE LONG BONES.

Delivered at St. Thomas's Hospital on June 16th, 1904,

By WILLIAM H. BATTLE, F.R.C.S. Eng.,
SURGEON TO ST. THOMAS'S HOSPITAL.

GENTLEMEN,—We have recently been considering the subject of osteo-sarcoma in the wards owing to the presence in the Beatrice Ward of a patient with a hard tumour of the ilium of rapid growth. It is, however, most frequently in connexion with the femur that such growths are found and in the thigh there are difficulties in the diagnosis which are worth presenting to you. You will have no difficulty in making a diagnosis in cases of ordinary exostosis, ossification of tendons, or ossification of tendons near a Charcot's joint. Central myeloid growths with their thin coating of expanded bone are usually easy to comprehend and I do not refer to them but to the sarcomatous growths, mostly peripheral in origin, in which bony tissue has developed and which have attained a large size when they present themselves for treatment. As a rule, in such cases we get an account of a tumour of rapid painless growth, with, or perhaps without, a history of injury. The tumour is hard, without tenderness, and has a well-defined, somewhat abrupt margin. An x-ray photograph probably shows an invasion of the new growth by spicules and irregular columns of new bone which radiate from the periosteum almost to the periphery of the growth. Should this arrangement of permeating bone be different and the amount of softer growth of the periphery almost imperceptible then difficulty arises, especially if there is a clear history not only of injury but of actual fracture of the bone. Of this fact the case of the patient who was shown by me at the Medical Society of London in 1901 is a good example and a photograph of the limb is reproduced in the Transactions of the Medical Society of London for that year (Fig. 1). Part of the tumour can be seen in the prepared specimen before you which resembles in section the appearance of the skiagram reproduced (Fig. 2).

The patient was a boy, aged three years and nine months, sent to me by Mr. F. W. Waters of Sheerness, and admitted for a swelling of the thigh into Leopold Ward. St. Thomas's Hospital, on Nov. 8th, 1901. The following is from notes by Mr. G. T. Birks. There was no family history of tumours. (The mother of the boy developed sarcoma of the thigh and underwent amputation at another hospital some months after the boy had undergone amputation for his tumour.) It appears that on April 1st the patient fell and broke his left thigh. He was taken to a medical man three days later and the limb was put in a plaster-of-Paris splint. Three weeks later the splint had to be removed on account of the increased size of the thigh. Sand-bags were then employed for two weeks to keep the limb at rest. His mother said that the affected thigh had at one time measured 25 inches in circumference but was now diminishing. He was in no way out of health at the time of the accident or afterwards.

On admission the state was as follows. "The left thigh exhibits a smooth, somewhat fusiform enlargement extending from the knee to the hip. The greatest circumference of the left thigh is 14 inches, that of the right thigh is 7½ inches. The swelling is very smooth and of bony hardness and there is not a great deal of tissue intervening between it and the skin. Both above and below there is a very distinct raised outline to be felt on deep pressure. This enlargement extends all round the femur. The left leg cannot be flexed to a right angle owing to the projection of the tumour posteriorly. There is no limitation of movement at the upper end and no enlarged glands in the groin (Fig. 1). The boy appears remarkably healthy, cheerful, and free from pain, being able to run about without apparent difficulty, and there are no secondary growths to be felt. He sleeps well. The urine is normal." A skiagram showed that the whole shaft of the femur was involved in the growth, which had a very definite bony outline, whilst the substance of the tumour was traversed by a network of wavy bony lines which did not radiate from the shaft of the femur. There had been a fracture of the middle of the shaft. Some days later the tumour was again examined with the x rays and its upper limits were clearly defined, whilst the whole skeleton was searched for evidence of secondary growth but none was found. On Dec. 13th the limb was amputated at the hip-joint. The abdominal aorta was compressed by the finger of an assistant, an Esmarch's bandage was applied up to the knee, and the limb was removed after the formation of skin flaps and division of the muscles close to the pelvis. During the operation normal saline solution was injected into the subcutaneous tissue of the arm as the veins were too small to be used. The limbs were wrapped in flannel bandages and other precautions were taken against shock. Union took place by first intention and he left for home on Jan. 18th, 1902.

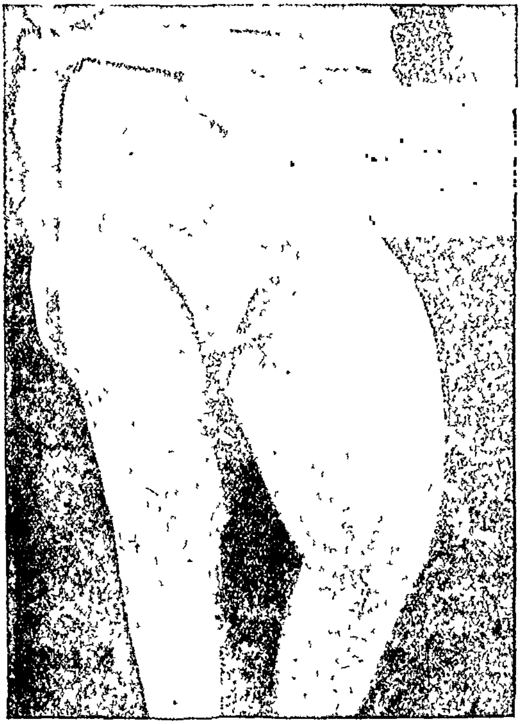
A few days before leaving a swelling was found about the upper end of the left ulna; this did not, however, develop, but in 1903 the patient returned to the hospital with a rounded growth of the lower end of the right femur, similar in feel and in appearance under the x rays to the tumour of the thigh which had been removed by amputation. No operation was recommended. His general health continued good.

This tumour had not quite the usual feel of an osteo-sarcoma of the femur, for there was apparently nothing but bone, and one suggestion offered at the meeting of the Medical Society was that it was simply a large mass of callus developed after a fracture of the femur, associated with an extensive blood extravasation. I was not able to accept this suggestion, although the bone arrangement as shown by the x rays was unusual, for it appeared to me that the upper limit of the swelling was too abrupt and the swelling too large for anything but a sarcomatous growth. A swelling produced by callus should have subsided to a much greater extent, considering the time that had elapsed since the injury, and have been of a more marked spindle shape.

A case to which I alluded at the discussion on this patient at the Medical Society, in which a woman suffered a spontaneous fracture of the femur and in whom an extensive deposit of callus followed resembling a sarcomatous growth, was that of a married woman, aged 35 years, who was admitted to the Elizabeth Ward on May 16th, 1900, with the following history (from notes by Mr. Sampson). On March 2nd of that year the patient, who had alighted from a tramcar, was walking across the road to the pavement when she suddenly felt severe pain in the left hip and became unable to walk or even to put her foot to the ground. She was conveyed home and the medical man who was called in told her that she had broken her hip. She was in bed for seven weeks; she noticed that her hip and knee both became swollen and that discolouration showed about both joints. She had pain until a week before admission and when it ceased she got up. She then discovered that the left leg was shorter than the right and that it gave her much pain to put the foot to the ground. Since March she had been losing weight. She had complained of pain in the leg for about two years before the accident but had had no difficulty in walking and noticed no difference in the length of the limbs There was no history of syphilis

On admission the following notes were made "She is a fairly well nourished woman with a large swelling of the left thigh This is hard to the touch, somewhat irregular in outline, evidently attached to the bone Chiefly prominent on the outer side of the thigh it extends over the upper third of the bone, *it is not very tender on* examination There is about an inch shortening The great trochanter of the femur appears displaced upwards but it is difficult to make certain of this as there is so much swelling in this part The hip joint does not appear to be affected but there are wasting and some weakness of the left thigh The reflexes are absent in both knees, the ankle and patellar clonus are also absent. The eyes are normal. Condition generally good The temperature is normal" A skiagram taken on May 12th showed that "there had been an old fracture of the femur about two inches below the great trochanter. The upper fragment is abducted, causing the angle formed by the neck and major part of shaft to approach a right angle" Extension applied to the thigh appeared to give relief to the pain and the patient thought it increased the length of the limb This was doubtful

FIG 1.



Osteo sarcoma of the femur in a boy aged three years and nine months which followed a fracture

The patient remained under observation in the hospital until July 7th and the swelling diminished in size After leaving the hospital she attended as an out-patient for about 12 months At the end of that time she was without pain and walked very well but the swelling had not altogether subsided

The history of this case—a spontaneous fracture followed by shortening and a tumour—made the suggestion of sarcoma a very plausible one (indeed, the case is so described to this day in the Hospital Reports) and was confirmed by the size of the tumour, which was large. Against this view were the fact that the lower margin of the growth appeared to shade off gradually, so far as could be felt, for the patient was rather fat, and the fact that the fracture had consolidated, whilst the absence of reflexes hinted at another reason for spontaneous fracture—locomotor ataxy. It was decided, therefore, to watch the case and the result *proved the wisdom of such a course*

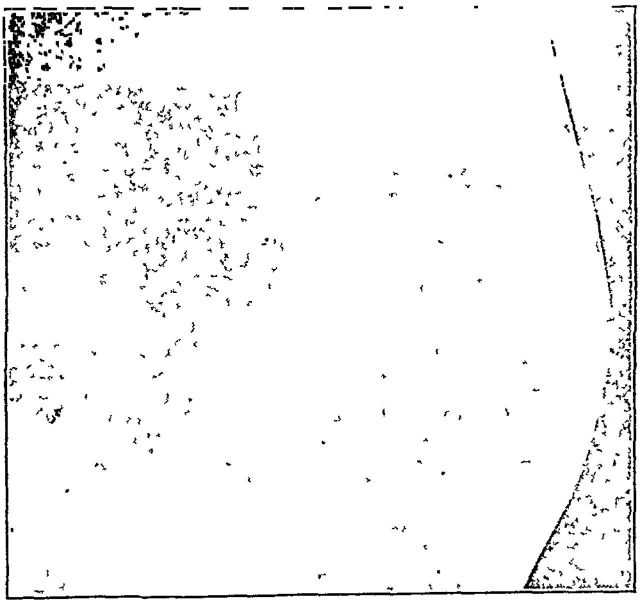
Another case in which there was a history of fracture followed by tumour, deformity, and shortening suggested still more strongly the presence of an osteo sarcoma A married woman, aged 51 years, was admitted to Beatrice Ward on Nov 26th, 1902, for a tumour of the right thigh (The following is from notes by Mr C Thompson.) The history which she first gave was that of a fall during the first week in October, she slipped on some whitewash and was unable to get up again owing to extreme pain in the right thigh She was taken to the Cottage Hospital of her part and was there treated with a long outside splint for five weeks When the splint was removed the patient says that the leg was quite straight and that it had become out of shape since It was ascertained later that she had been wearing a high boot on that side for two years before the accident She also admitted in cross examination that she had felt her right thigh bone very distinctly in the upper part during the previous July There had been occasional pain and swelling in the right knee for four years On examination of the right lower extremity it was found to be extremely rotated inwards, the inner side of the right knee lying on the bed There was also some slight adduction of the limb. In the upper and front part of the thigh there was a large prominent swelling which was of bony consistence, Nélaton's line ran through the top of this swelling which gradually shaded into the substance of the femur and this bone appeared thickened almost to the knee The patient was able to move the limb, but movement was slight and mainly in the direction of flexion, passive movement could be carried out to a similar extent and did not affect the ilium At the back of the tumour and connected with it was a smooth rounded lump which felt like the head of the femur. The right leg measured 31 inches and the left 33½ inches The family history was good and she was said to have been always healthy Menstruation had been profuse every fortnight for the last six years and she said that she had lost a good deal of blood, there had also been an offensive discharge Dr W W H. Tate kindly examined the patient and reported that the uterus was normal. The head was normal, there was no enlargement to be felt in any other bone, and no tumour could be discovered excepting that of the right thigh. The urine was of specific gravity 1020, was acid, and contained a trace of albumin. An examination with the x rays showed, early in December, that the head of the femur was lying in its normal position and that there had been a fracture of the neck A skiagram taken on Dec. 12th showed the condition which is illustrated (see Fig 2), there being great deformity about the upper end of the femur. Skiagrams taken later of the lower end of the femur and upper end of the tibia showed a woolly outline of the bones with evidence of rarefaction of the cancellous tissue

On Jan 23rd an exploratory operation was performed in the upper and outer part of the femur. A portion of the bone was removed with the trephine and sent to the Clinical [illegible] that its examination [illegible] perature was normal [illegible]ture was given. The patient declined further treatment and left the hospital on Feb 18th, 1903 The limb was quite useless and extension applied to the leg had produced no apparent effect.

This was then a case of osteitis deformans affecting the femur only, so far as could be ascertained by ordinary examination aided by the history; later the x rays showed the characteristic change in that bone and changes in the *tibia also. But at first, as there was no alteration in the* skull or elsewhere in the skeleton, the diagnosis was not clear and other things had to be considered. The helpless appearance of the limb, with the history of uterine hæmorrhage and discharge, suggested secondary carcinoma but the more complete history and the result of Dr. Tate's examination negatived this. This history and the x-ray examination made it evident that the primary condition was osteitis deformans, but the statement of recent increase in growth made it advisable to explore in order that all fear of sarcoma might be excluded; so many cases of osteitis deformans have developed a sarcomatous change and ended fatally.

Osteitis deformans rarely affects the femur only (there are usually other bones affected, including the skull) and when it does it leads to tumour of slow growth with shortening in the length of the limb. The tumour shades into the bone above and below, whilst the shortening is slowly progressive yet the patient is not prevented from going about at any time. I exhibited a patient at the Medical Society of London (see Fig. 3) with a tumour due to this disease affecting the left femur, in whom there were two inches shortening and a posterior curve, but this had been gradual and not attended with pain. Mr. A. A. Bowlby has recorded a similar case.

FIG. 2.

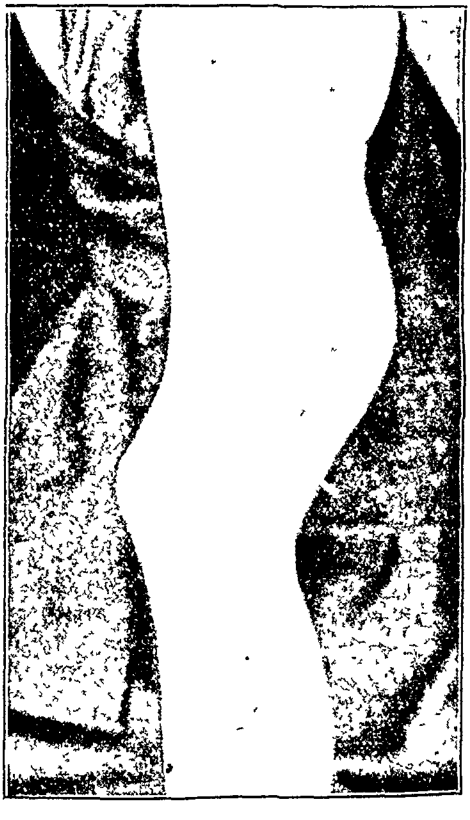


Osteitis deformans affecting the right femur in which there had also been fracture.

Quiet necrosis is one of the diseases which may very closely simulate the formation of a sarcoma of the bones and there have been several cases published since attention was drawn to it by Sir James Paget in his clinical lectures. There will have been a history of the formation of a tumour attended with little or no pain, and not only with no signs of suppuration but not even with those of inflammation. Moreover, there may have been a spontaneous fracture. In reading most of the histories of these cases one had not gathered the impression that they were likely to affect a large extent of bone, and that several inches of such a large bone as the femur could not only die but become separated without any of the signs associated with such a necrosis seemed unlikely and difficult of belief.

Some of you may recollect the following case. On Feb. 11th, 1901, a man, aged 21 years, was admitted to Leopold Ward with a tumour of the right thigh. (The following is from notes by Mr. Gibson and Mr. Raby). It was stated that his father had died from consumption but that he had enjoyed good health. He had rheumatism in October and noticed a pain in his right knee; he went to work for a day or two but then became so bad that he went to bed. He was given iodine to paint the knee, but this did it no good and the swelling became larger. There was not much pain at the time of admission and he slept fairly well, but he had become much thinner. The patient was pale, thin youth, with marked enlargement of the right thigh. The right knee appeared to be swollen but there was no effusion in the joint. Above the joint the skin was normal and the swelling extended for two-thirds of the length of the femur, encircling the bone; it was uniformly hard and fixed. No fluctuation or egg-shell crackling could be felt, but it was thought to be œdematous laterally near the knee. It was slightly tender to the touch, but at no point was this more marked than elsewhere. In circumference the right thigh at its most prominent part (the middle) measured 17½ inches and the left at a similar point 14 inches. The hip- and knee-joints were unaffected. Along the line of Poupart's ligament were several enlarged and hard glands. There was no swelling in the pelvis or sign of secondary growth or abnormal enlargement of the skeleton. The temperature was 100° F. on the night of admission, did not exceed this later, either before or after operation, and was usually normal. The liver margin extended for a distance of one inch below the costal margin, but gave no evidence of disease. The urine was of specific gravity 1020 and was acid. Albumin was present in some quantity. There was no blood. The late Dr. Blacker examined the limb with the x rays and reported as follows: "Right femur shows new bone, apparently periosteal, along the shaft of the bone. No definite sign of new growth from any particular part. ? Sequestrum in centre of shaft, the shadow being rather pronounced." On Feb. 26th a small area of fluctuation was found about four inches above the knee, but without increase of pain or tenderness (Fig. 4).

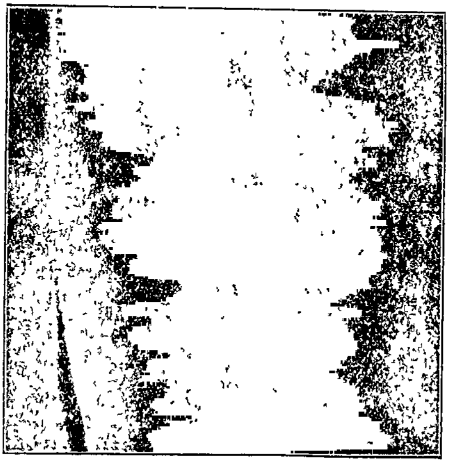
FIG. 3.



Tumour of the thigh produced by osteo arthritis with posterior excurvation.

On March 8th operation was performed under anæsthesia, an Esmarch's bandage being put high up on the thigh. An incision of six inches in length was made on the outer side above the external condyle. The muscular tissue cut almost like new growth; the bony tissue was vascular, of recent deposit, and when cut through with a chisel was found to inclose a large sequestrum. There were several smaller ones but this one extended for five or six inches upwards and included nearly the whole of the thickness of the shaft.[1] After extension of the incision and a further enlargement of the opening in the involucrum the sequestrum [illegible] considerable amount of granula- [illegible] dead bone; but no pus was seen. [illegible] was a flow of whitish fluid almost like milk from the area of fluctuation noted on Feb. 26th. The granulation tissue was examined microscopically but showed no sign of any tumour formation or of tubercle.

FIG. 4.



Quiet necrosis of femur.

The sinuses had healed before the patient left the hospital on April 24th, 1901, and the albuminuria was less. When seen some weeks afterwards he was much improved in every respect and had but a slight amount of albumin in the urine.

On admission this swelling resembled very closely that produced by an osteo-sarcoma of the femur. The absence of pain, the large extent of femur involved, a normal temperature, the presence of enlarged glands, the history of loss of flesh, and the anæmic appearance of the boy all pointed to the diagnosis of osteo-sarcoma

In favour of quiet necrosis was the feel of the upper limit of the growth which was not clearly defined but faded gradually on the femur, and the presence of œdema of the lower part (not noticed by all), and later an area of fluctuation. Œdema of the subcutaneous tissue is in favour of some change of inflammatory character, but a point of fluctuation such as that found might simply indicate a cystic change or local hæmorrhage in the case of a growth. The albuminuria must, I think, be included amongst the evidence in favour of quiet necrosis, for it diminished greatly when the wound had healed and the process of disease had been arrested. I do not think that it has been noticed in quiet necrosis hitherto, but as it may result from dry caries of the spine there appears no reason why it should not follow a dry necrosis of one of the long bones and be, as here, an indication of amyloid change in the kidneys. A normal temperature is given as in favour of sarcoma, but the course of some of the rapidly growing sarcomata is accompanied by fever—100°, 102°, 103·6°—without local signs of inflammation. This must be remembered, for a grave condition is likely immediately to ensue should an incision be made into a sarcoma under the impression that it is an abscess. I recollect one case in which this was done by a medical man before sending his patient to the hospital. The hæmorrhage was so profuse that he thought he must have opened the femoral artery. In that case redness was also present and the only guides were the long history of the case and amount of surrounding growth infiltration.

The examination by the x rays in our patient showed the exact condition; without it we might have been compelled to explore in order to make a diagnosis. Yet, as a small piece of necrosed bone might escape detection by this method, careful exploration should be made before amputation in all cases.

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[1] See St. Thomas's Hospital Museum Catalogue.

NOTE ON THE SERUM TREATMENT OF EXOPHTHALMIC GOITRE.

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THE treatment of exophthalmic goitre still leaves much to be desired, for although good results are obtained in many cases by our present methods improvement is often slow and some cases do badly. More especially do we require some efficient means of treating those cases in which the symptoms rapidly become acute and the patient dies within a few days. It has been my misfortune to see several of these cases where the patients have died after a few days of acute illness and it has seemed possible that in this class of case, in which the symptoms are evidently due to a toxæmia, an antitoxic serum might be useful. The evidence we at present possess tends to show that the symptoms of this malady are due to the morbid condition of the thyroid gland and are the result of an excessive formation and absorption of thyroidal secretion. Whether this secretion is simply increased in amount, while it retains the same physiological properties as in health, or is changed in constitution is still an open question which, however, may have an important bearing on the preparation of an antitoxic serum. Assuming, in the absence of proof to the contrary, that the excessive thyroidal secretion has similar physiological properties to that which is formed by the normal gland, there are different ways in which serum treatment might be of service. Thus, a cytotoxic serum prepared in the manner described by Portis might have a specific action in inducing atrophic changes in the redundant secretory epithelium of the enlarged thyroid gland and so diminish its over-activity; or an antitoxic serum might be prepared by Moebius's method or by the method adopted by Lepine and by myself, which would directly neutralise the action of the excess of secretion in the blood. We may regard the symptoms as being due to a toxæmia the source of which is the diseased thyroid gland, just as much as the toxæmia of diphtheria or tetanus is due to the production of toxins in the locally infected area; and although we have no reason to regard Graves's disease as infective in origin I see no good reason why an antitoxic serum should not be obtainable by suitable methods similar to those employed in the case of the infective diseases.

Portis[1] endeavoured to produce symptoms similar to those which follow removal of the thyroid and parathyroid glands in animals by means of specific cytotoxins selective in action on the thyroid and parathyroid cells, causing their degeneration and loss of function. The possibility of this had previously been indicated by the preliminary reports of Mankovsky[2] and of Goutscharukov,[3] both of whom had stated that they had produced thyrotoxic sera, injections of which produced symptoms like those of tetany, the thyroid cells showing evidences of degeneration. Mankovsky introduced the thyroid glands of dogs into the peritoneal cavity of cats at intervals of a fortnight and after the third injection bled the cats and separated the serum which proved toxic to dogs. Goutscharukov also used the thyroids of dogs, injecting them into rams and so produced a serum which he considered to be thyrotoxic. Portis employed increasing doses of an emulsion of dog's thyroid. Beginning with one gland he increased the dose up to ten glands, injecting the emulsion into the peritoneal cavity of a goat, not more than one month being allowed to elapse between impair the prospect of union, I believe we may confidently offer to our patients by this operation great relief from their sufferings and a measure of health undreamt of before. I will first turn to the consideration of the cases of perforated gastric ulcer.

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[1] Journal of Infectious Diseases, No. 1, Jan. 2nd, 1904.
[2] Russ. Archiv für Pathologie, 1902, pp. 571–91.
[3] Centralblatt für Allgemeine Pathologie und Pathologische Anatomie, 1902, Band 13, S. 121–24.

CASE 1. *Perforated gastric ulcer, occurring twice in a year, the second operation accompanied by gastro-enterostomy.*—The patient was a female, aged 22 years. The first perforation occurred on May 17th, 1903. There was a history of gastric pain and vomiting over several years. She had been under my care for the previous 12 months. On the afternoon of May 17th whilst asleep in a chair somebody entered the room hastily and gave her a fright. This was immediately followed by sudden acute pain in the abdomen. She was first seen at 5 P.M.; the pulse was rapid, the temperature was 100° F., the expression was anxious, and every movement gave pain. She complained bitterly of pain in the left shoulder tip (a symptom that I have found not uncommon in these cases), the abdomen was distended, and the liver dulness was lost. I diagnosed a perforated gastric ulcer. She was removed to the infirmary and I operated at 8.45 P.M., four and a half hours after the perforation. An ulcer was found on the anterior wall of the stomach. There was little or no extravasation of the stomach contents into the peritoneal cavity. I excised the ulcer and the resulting wound in the stomach was secured by two layers of silk stitches. The peritoneum was freely douched with hot saline solution, and no drain was used. Recovery proved uneventful. She left the infirmary in a month. Progress for six months was satisfactory; she had no pain after eating and remained in the best of health. I saw her again at the beginning of this year, because she was complaining of pain under the tip of the left ninth rib, which she described as of a dragging character. It was not aggravated by food. I suspected an adhesion resulting from the operation and advised rest in bed, great care with diet, and, if no relief resulted, to have the abdomen opened to investigate the cause. The patient was not seen again until May 29th, 1904. She had been off and on well since my last visit in February, sometimes free from pain and at others suffering severely, but it now had relation to food. She stayed in bed on May 25th and 26th for this same pain, but on the 27th and 28th she had been better and freer from pain than at any time since the operation. During the afternoon of the 29th she played croquet and afterwards ate a full tea of ham and eggs, and subsequently went for a walk. At 9.15 P.M. or thereabouts she had a drink of milk and soon after complained of severe abdominal pain whilst walking in the street. This was so bad that she had to get a cab to take her home. I first saw her at 11 P.M. and found the abdomen not very distended, but acutely tender to palpation, more especially over the left hypogastric region and in the epigastrium. The liver dulness was slightly diminished, and there was much rigidity of the abdominal muscles. She had vomited and was constantly making slight attempts at regurgitation which brought on severe pain. She could not micturate although there was a constant desire so to do. The pulse was 132, respiration was almost entirely thoracic, the tongue was furred, the breath was offensive, and the temperature was 100·4°. I suspected perforation, although the symptoms were so vague, and strongly urged an exploratory operation. It was now that she begged for morphine and wished me to leave her till the morning, but I absolutely declined. Hence some delay took place and it was not until 1.45 A.M. on the 30th that I was able to operate—four hours after the perforation.

On opening the abdominal cavity many firm adhesions were encountered binding the stomach to the abdominal walls and to the liver; great difficulty was experienced in separating the stomach and when this was done the position of the old ulcer was easily made out, quite obliterated, but in the stomach wall in this position I could feel the silk that had been used in the previous operation. The stomach itself was very much congested. No free gas escaped from the abdominal cavity and there was not much evidence of soiling beyond stray flakes of lymph, so that I doubted at first whether a perforation had occurred, but on gently drawing the stomach into the wound a fresh ulcer fully four and a half inches from the site of the previous perforation came into view with a minute perforation in its centre. The ulcer was close to the lesser curvature and from its proximity to the œsophagus difficult of access. It was of about the size of half a crown, very cartilaginous, and the margins of the perforation were hæmorrhagic in appearance. I found it quite impossible to excise, so closure was effected after some difficulty by two layers of fine silk sutures and a piece of omentum was anchored over the site to give additional security. I determined, in view of her good condition at this stage of the operation, the absence of any severe peritonitis, and to prevent the possibility of recurrence, to perform an immediate posterior gastro-enterostomy. This I did as quickly as possible. Subsequently I douched out the peritoneal cavity with large quantities of hot saline solution, a great deal of which being left in, the abdomen was closed in the usual way. No drain was used. She stood the operation very well and her subsequent progress proved uneventful. There was no regurgitant vomiting; in fact, she has never vomited since the operation. She left the hospital in a month. Her present condition is one of gradually improving health.

CASE 2.—The patient was a female, aged 21 years, having a previous history of gastric trouble. Perforation occurred three hours after a hearty meal. The operation was performed two and three-quarter hours afterwards. I discovered a small perforation on the anterior surface which was easily sutured. Lavage was used but no drain. She made an uninterrupted recovery except for some effusion into the left pleura which subsided without tapping.

CASE 3.—The patient was a female, aged 24 years. There was a vague history of previous gastric disorders. The symptoms commenced three days before she came under my care. She had had violent abdominal pains and vomiting, but as she continued to eat heartily till within 24 hours of admission this was hardly to be wondered at. When I saw her the temperature was 101·2° F., the pulse was 140, and she presented all the signs of acute appendicitis. A large incision was made over the cæcum but I soon saw that I had to deal with a subacute perforation of the stomach. A further incision was made over the epigastrium and my examining finger entered an irregular cavity which was bounded below by the pylorus, externally and above by the lesser lobe of the liver. From this stomach contents were escaping. No attempt at closure was made or was possible. Gauze was packed into the cavity and a big drain was put in the lower opening. Strange to say, except that it was prolonged her recovery was uninterrupted. On the fourth day I extracted a piece of bacon from the upper wound, proving at once the correctness of my diagnosis and the tolerance of the much-abused peritoneum.

CASE 4.—The patient was a female, aged 17 years. There was a long previous history of stomach pain, &c. The first symptoms of pain occurred two days before acute illness. Operation was performed approximately 14 hours after perforation. A perforation on the anterior wall of the stomach was easily found and sutured. There was no lavage, only systematic mopping. A small gauze drain was inserted. Recovery ensued without a bad symptom. Her temperature was 101·2° F. before the operation and the pulse was 122. In three days the temperature was normal and the pulse was 88.

CASE 5.—The patient was a female, aged 23 years. We have very little history of this case. She was admitted to the infirmary 20 hours after perforation in a moribund condition. Operation was performed 23 hours after perforation. On opening the abdomen the peritoneal cavity was literally awash with dark brown fluid. The perforation was close to the pylorus and very difficult to suture. Every attempt was made to cleanse the peritoneum by lavage and a suprapubic drain was used. She died seven hours after the operation.

CASE 6.—The patient was a woman, aged 38 years. This is one of the most interesting and instructive cases that I have seen and is the record of a success and a failure. She was a weakly woman, the mother of ten children, and with a history of gastric ulceration extending over many years. On the morning of Dec. 14th, 1902, in the act of micturition she was suddenly seized with acute pain in the left groin and over the bladder, so severe that she nearly fainted and had to have brandy. I saw her at 3 P.M.; she then presented the following curious train of symptoms. There was a left femoral hernia which was quite recent but which I was able to reduce without difficulty. The abdomen was not distended nor hard; it was exquisitely tender over the epigastric region but she persisted that the chief seat of her trouble was in the bladder. The liver dulness was unaltered and there was no free fluid in the flanks. Her tongue was only moderately furred, there was no vomiting, and the temperature was 100·4° F., but her pulse was thin and rapid at 128. In spite of these vague symptoms I decided to operate and did so eight hours after perforation. On opening the abdomen I found on the anterior surface in the outer third a large indurated gastric ulcer of about the size of a five-shilling piece with a tiny perforation right in the centre of it. I had to excise the ulcer and then brought the big gaping wound together in the usual way, the final *fold in the vertical axis being quite four inches long.* Lavage was used and a suprapubic drain. All went well for five days when she began to get true regurgitant vomiting. We tried all possible means to stop it by syphonage, &c., but ineffectually. So on the evening of the seventh day, *recognising that she must have pyloric obstruction,* I re-opened the abdomen to find that the site of my previous operation was almost obliterated, so complete was the healing. But what I did find was a very marked hour-glass state of the stomach. The communication between the two compartments only admitted my *little finger.* This contrac- [illegible] very long-standing ulceration. I [illegible] a posterior gastro-enterostomy. [illegible] shock in eight hours. My great regret is that I did not discover the whole extent of the stomach mischief at the first operation when, if I had done the two things at the same time, I believe she might have had a better chance.

CASE 7.—The patient was a female, aged 24 years. With regard to her previous history, for some months she had suffered from pain after food and vomiting and her general health had been suffering. She had partaken of a hearty dinner on May 29th, 1903, and during the afternoon had walked a distance of some three miles, when she was suddenly seized with abdominal pain. In spite of its severity she managed to walk home and I was not summoned to see her until 8.15 P.M. On my arrival I found her in intense agony with distended abdomen, constant vomiting, rapid pulse, and slightly elevated temperature. I had no difficulty in arriving at the conclusion that she was suffering *from perforated gastric ulcer and advised her removal to the* Infirmary. [illegible] six and a [illegible] abdomen [illegible] peritonitis due to the escape of gastric contents from a large perforation on the anterior wall of the stomach. The ulcer was excised and the stomach sutured with two layers of silk and over the seat of the wound a portion of omentum was anchored. Very careful and systematic douching of the peritoneal cavity was used, followed by mopping in all available pouches. From the extensive soiling of the peritoneum that had occurred I deemed it wise to employ a suprapubic drain and I also passed a large gauze drain down to the site of the wound in the stomach. For 14 days her progress was uneventful. There was considerable oozing from the pubic drain and also along the track formed by the gauze in the upper abdominal wound, but this gradually ceased and by June 12th both abdominal wounds were soundly healed. On the morning of the 12th she complained of not feeling so well, with a pain in the left axillary region. Examination revealed friction and some dulness over the left base posteriorly. Early in the morning of the next day she had a rigor and the temperature rose to 103·4° F. Aspiration of the pleura revealed nothing although I quite believed an empyema was forming. The rigors were repeated on several days and the temperature remained very irregular but the pulse was not markedly accelerated nor were her constitutional symptoms bad. Events progressed much in the same condition until the 30th when she had another slight rigor and again the aspirator was used, and by plunging the needle deeply in between the ninth and tenth ribs I came upon pus. That afternoon I resected a portion of the ninth rib and on opening the pleura I was disappointed not to find pus. It seemed I had to deal with a subphrenic abscess, so I merely contented myself at this time with stitching the pleura together with a view to opening the deep-seated abscess on a subsequent day. On July 3rd I attempted to find the pus by incising the diaphragm but again my search was fruitless. Therefore I proceeded to make a long curvilinear incision below the ribs and fully exposed the posterior surface of the spleen. *This was firmly adherent in all directions and* I presume the friction heard was caused by peritonitis localised in this position. With my finger I separated the spleen as far as possible but came upon no abscess. Despairing of finding the abscess by these double posterior incisions I re-opened the abdominal wound in the middle line. Apparently everything was perfectly normal; the stomach was quite healed; there was no general peritonitis and I am sorry to say I could in no wise localise the small abscess wherever it was. From this time forward she steadily went downhill. She was seen by Dr. G. Newton Pitt and by Dr. Julius Dreschfeld on more than one occasion. Many attempts were made with aspirating needles to find the pus but all without avail. The physical signs over the base of the left lung were most deceptive. Consolidation with increased voice sounds and amphoric breathing led one to think that a pulmonary abscess was in process of formation, but no evidence of this could possibly be found, the general opinion *being that an abscess had formed in the lesser sac* but was impossible of access. Palpation of the abdomen gave no pain and it was free from any dull area. From the beginning of August, however, her general symptoms seemed to improve and the temperature began to fall, so that from the 9th to the 12th it was rarely above 100°, but on the 13th it went up to 105°. Her condition became most alarming. Feeling matters were in a desperate state I once again used the aspirating needle, pushing it deeply in between the ninth and tenth ribs. At last I came upon the pus which I had so often sought for ineffectually. Leaving the needle in [illegible] the pleura and, [illegible] ed opening in the [illegible] escaping. I put [illegible] ied 24 hours after the operation, two and a half months *after the original* perforation of her stomach.

No post-mortem examination was allowed but the final operation revealed sufficiently the regrettable conditions which led to her death—namely, the slow formation of subphrenic abscess. Possibly the pus which I drew off at the first aspiration emptied the small loculus, so that it became increasingly difficult—nay, impossible—to find it again, as witnessed by the many unsuccessful attempts which were made to reach it both by the aspirating needle and *digital exploration. I have no doubt that the fatal* catastrophe was brought about by the subphrenic abscess bursting into the pleura and causing a rapid septic invasion.

The consideration of this case opens up that debateable question in treatment—whether douching or simple mopping is the better method of cleansing the peritoneum. For myself, I think that every case needs to be treated on its own merits. Where there has been, as in the above case, copious exit of stomach contents aggravated by walking *fully three miles* it seems to me that nothing short of lavage followed by mopping would do good. But there is no doubt that free drainage is all-essential and if a drain in the left lumbar region had been used as well as one over the pubes the result might have been different.

The following is an abstract of the cases that I have operated upon for some of the complications of chronic gastric ulcer.

CASE 1.—A married woman, aged 54 years, was admitted under my care to the Southport Infirmary on Oct. 26th, 1901. There was a history of chronic gastric troubles extending from Christmas, 1897, to the present time. She suffered from severe pain after food with *constant vomiting,* which at times was of a coffee-brown *colour and then* very copious. She had been treated in several institutions for the same complaint and whilst she improved under treatment, with the resumption of her work her symptoms rapidly recurred. She had been under my care during 1900, but had now completely relapsed. After two [illegible] ary she consented to operation [illegible] 11th, 1901, a posterior gastro- [illegible] *A bone bobbin was used. The* stomach presented all the appearance due to chronic ulceration. The anterior wall was much thickened near the pylorus, the veins were enormously distended, and there were several enlarged but discrete glands along the lesser curvature. All went well for 11 days when she had a most severe attack of regurgitant vomiting. Her condition suddenly became most alarming. She vomited six quarts of bilious fluid in 12 hours. All feeding by the stomach was stopped and it was washed out every three or four hours. By these measures the difficulty was overcome and on Dec. 29th stomach feeding was resumed. Her further progress was uneventful and she left the infirmary on Jan. 14th, 1902, better than she had been for years. I have recently heard from her. She is in good health, is able to do her work, is free from pain, and has gained flesh.

CASE 2.—The patient was a man, aged 67 years, who was admitted on August 6th, 1902. His complaint was of constant gastric pain, incessant vomiting, and loss of flesh. Examination revealed a painful area over the pyloric region but no lump could be felt. There was much dilatation of the stomach with subacidity. His urine was free from albumin and sugar but of low specific gravity. His sufferings were so acute that he readily consented to an exploratory laparotomy with a view of performing gastro-enterostomy or otherwise as circumstances might direct. At the operation the pylorus was found to be stenosed considerably and the stomach was very much dilated. A posterior gastro-enterostomy was performed and a bone bobbin was used. As far as the immediate operation was concerned he did very well. Within a fortnight he was eating semi-solid food heartily and without pain. He also began to put on flesh. On the twenty-fourth day after the operation regurgitant vomiting commenced and in spite of all measures adopted this persisted until his death which took place about five weeks after the operation. At the post-mortem examination the kidneys were found to be contracted and granular and I inclined to the view that this condition determined the fatal issue, but at the same time this is open to discussion. The probable explanation from examination of the stomach and bowel is that the loop from the duodeno-jejunal angle was too long. It was the failure in this case that directed my attention so strongly to the importance of making a short loop. At the same time I believe fatal regurgitant vomiting commences much earlier than was the case in this patient. He refused any further operation, otherwise I intended to reopen the abdomen to perform a lateral anastomosis between the two limbs of the loop.

CASE 3.—This case I have referred to above (Case 6). It was a complementary operation to the accident of perforation and the patient died within eight hours of performing the same.

CASE 4.—A woman, aged 28 years, was admitted under my care on Dec. 29th, 1902, and gave a very long history of gastric trouble. She had been in St. Thomas's Hospital under the care of Dr. W. M. Ord so far back as 1891. During the early part of 1901 she was admitted to the Southport Infirmary for hæmatemesis and was discharged relieved after a stay of 15 weeks. Hæmatemesis recurred on Dec. 25th, 1902, and for this she again sought admission. From the constant pain and vomiting she was so reduced that I deemed it best to keep her under observation for six weeks, and under treatment she slowly improved. Operation was performed on Feb. 11th, 1903 There were well-marked hour-glass condition of the stomach and also some stenosis of the pylorus. Posterior gastro-enterostomy was performed with simple suturing and no bone bobbin was used. She made a speedy and good recovery with subsequent absence of pain after eating and a great improvement in general health.

CASE 5.—A man, aged 57 years, was admitted under my care on Oct. 24th, 1903. For 12 years he had been suffering from pain after food. Nine years previously he had severe hæmatemesis. For the past seven years he had made it a practice to wash out his stomach almost every day. A diagnosis of pyloric obstruction was made. On Nov. 7th I operated and found the pylorus so contracted that it would not even admit a small probe. A posterior gastro-enterostomy was performed. There was no regurgitant vomiting and his recovery was uneventful except for the fact that he suffered from troublesome diarrhœa. This I think was to be attributed to the fact that the intestines were unprepared for the sudden demands made upon them when he commenced to take ordinary food with freedom and comfort. He has gained nearly a stone in weight since the operation.

CASE 6.—The patient was a female, aged 28 years. There was a very long history of stomach trouble, vomiting, and hæmatemesis. She had been treated in several infirmaries without more than temporary relief. Operation was performed on Jan. 20th. Numerous adhesions were found binding down the pylorus. There was a large ulcer involving the anterior wall of the stomach. This was adhering to the anterior abdominal walls, leading one to believe that on some previous occasion a perforation had taken place. A posterior gastro-enterostomy was performed and her recovery was rapid. There was no regurgitant vomiting. Before the operation she weighed under six stones and by April 16th, 1904, her weight had risen to 7 stones 6 pounds.

CASE 7.—A woman, aged 42 years, was admitted under my care on Feb. 25th, 1904. She was a fragile little woman suffering from rheumatoid arthritis. She had suffered also from considerable gastric pain and vomiting for many months and in spite of treatment obtained no relief. The operation was performed on March 16th. There was a well-marked hour-glass contraction of the stomach with a large chronic ulcer on the anterior wall and numerous adhesions to the liver and abdominal walls. A posterior gastro-enterostomy was performed and her recovery was uneventful. Her general health improved considerably and she left the infirmary on May 14th for a convalescent home.

CASE 8.—A woman, aged 49 years, was admitted under my care on April 4th, 1904. Her history of pain, vomiting, and hæmatemesis extended over a period of 20 years. With regard to her present condition, she was a pallid woman emaciated to a degree, complaining of great abdominal pain which was aggravated after taking food. There was marked rigidity of the abdominal walls and a sense of fulness and resistance was felt over the epigastrium. Operation was performed on May 5th. I found a large cartilaginous ulcer involving almost the whole of the anterior wall of the stomach. Its diameter was fully five inches and on invaginating the stomach wall the finger came upon a depression in the ulcer which seemed fully three-quarters of an inch deep. There were so many adhesions that the performance of a posterior gastro-enterostomy was exceedingly difficult, but union was successfully effected and her recovery was uneventful. There was no regurgitant vomiting. The patient left the infirmary on June 2nd for a convalescent home. I saw her again on June 20th. Her weight, which before the operation was 6 stones 4½ pounds, was now 6 stones 9 pounds. She was taking her food freely and without pain and the marked pallor of her face was greatly improved.

CASE 9.—The patient was a woman, aged 47 years. She had suffered from dyspepsia and gastric trouble since 14 years of age. From the Christmas of 1903 she had been considerably worse; the pain was not only in the epigastrium but also in the left hypochondrium. This was so severe that it had to be relieved by morphine but food often gave temporary relief. Vomiting was not a marked symptom. Dr. Dreschfeld saw her with me and confirmed the diagnosis of chronic gastric ulcer and strongly urged operation which took place on March 17th, 1904. There was well-marked hour-glass stomach which had dense adhesions to the neighbouring organs, particularly one which went downwards and forwards to be attached to the gastro-colic omentum, probably causing the dragging pain she so frequently complained of in that region. Posterior gastro-enterostomy was effected with some difficulty as there were so many adhesions. Her subsequent progress was uneventful. There was no regurgitant vomiting. She has gained over a stone in weight since April 20th.

CASE 10.—The last occasion on which I had the opportunity of performing a gastro-enterostomy is the one noted above (Case 1) who had suffered from double perforation.

I am well aware that a series of ten cases is too limited to draw any final conclusions from but they are a small contribution to the mass of evidence that is accumulating as to the benefits to be derived from the performance of a posterior gastro-enterostomy in judiciously selected cases.

Southport.

A CASE OF ACUTE DIABETES INSIPIDUS WITH FATAL COMA.

BY ALFRED H. CARTER, M.D. LOND., F.R.C.P. LOND.,
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THE following case is worthy of being put upon record owing to its rarity. The notes are unavoidably brief as I only saw the case once in consultation and no post-mortem examination was obtainable.

On July 11th last I was called to see a little girl, aged eight years, with Mr. A. E. Hancock of Saltley. The child was reported as being of a nervous and excitable temperament, but, apart from the presence of threadworms in the stools (to which the mother attached no importance and adopted no treatment), she was considered to be in good health until June 25th On that day she went to a school treat, to which she was eagerly looking forward and over which she was very excited The day was showery, but the child does not appear to have got wet, nor did she eat anything beyond a moderate amount of bread and butter and plain cake On the next morning she complained of being unwell, but with no definite symptoms On the following day she seemed to be better but from that time forward she became very thirsty, was always drinking water, and passed large quantities of pale urine The amount was not measured but was said *to be at least from six to eight* pints in the 24 hours Sleep was disturbed owing to the *frequent calls to pass urine but otherwise the child com*plained of nothing, her appetite was good, and she had no pain The mother, thinking that the child s thirst was due to the hot weather, did not seek medical advice Then the appetite gradually failed, the child became pale lost *flesh, and the skin became very dry The diuresis continued* as before On July 10th she complained of pain in the stomach and vomited and Mr Hancock was called in He prescribed diluted milk and a mixture containing liquor bismuthi citratis and morphine ($\frac{1}{48}$ grain for a dose) On the following day the child was better The vomiting had stopped but there was still some uneasiness in the epigastrium I saw the child on that evening and found her drowsy but easily roused Her temperature was subnormal She was reported to have "wandered from time to time in her sleep She had only taken about a pint of milk and *water that day and the amount of urine had fallen* to a corresponding extent The respirations were deep, and were 24 per minute There was no cough The pupils were moderately dilated Beyond the dryness of the skin and emaciation no morbid physical signs were observed The urine (from a sample recently passed) was examined, it was of specific gravity 1018 and pale, there was a trace of albumin but *no sugar* Half a pint of hot normal saline fluid was ordered to be injected into the bowel and repeated every four hours On the next morning I heard that the saline injections had been retained and that the child had taken rather more nourishment but was more drowsy and her breathing was more rapid and panting Nothing was found on examination of her chest As the bowels were confined a dose of castor oil was suggested The next thing I heard was that the child had steadily become worse and died in the afternoon of July 13th

Mr Hancock has since sent me the following note ' The child never spoke after you saw her, the comatose condition increased the amount of nourishment taken was much less but was taken and swallowed up to ten hours before death The amount of urine passed from the time you saw her until death was about one third of an ordinary chamber potful The specific gravity was 1010 reaction slightly alkaline of a very pale colour with a slightly greenish tinge no blood no sugar and a very slight trace of albumin The microscope revealed nothing The rectal injections were retained The *pulse became feeble and compressible* About *one* hour before death it was 90 per minute The respirations increased [illegible] 40 per mi[illegible] ably from [illegible] normal Half an hour before death the conjunctivæ were insensible The castor oil was given but had not acted before death The condition was obviously closely allied to if not identical with the so called Kussmaul s coma in diabetes mellitus

Birmingham

A METHOD OF HYSTERECTOMY

BY JOHN O CONOR, M A, M D DUB

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As a general surgeon I feel some diffidence in intruding on the preserves of my gynæcological colleagues by inviting attention to a method of removing the womb which I have found both simple and efficacious I do not presume to claim any originality for the procedure as its simplicity dictates the conclusion that if the surgeon in the Ark performed abdominal hysterectomy in all probability he adopted some similar plan However, as I do not remember to have seen *the method described I may venture to publish it*, and before doing so I wish to acknowledge my indebtedness for ideas to Freyer s operation of prostatectomy and O Sullivan s cervical forceps

The patient is prepared for [illegible] light dietary and mild purgati[illegible] twice daily with acid mercurial l[illegible] mercurial sitz bath is given each evening The night previous to operation the skin of the abdomen is carefully cleansed and a mercurial moist dressing applied On the morning of operation the charge nurse gives the vagina a final irrigation the bladder having been previously emptied *Chloroform having been administered the patient is placed* for a few moments in the lithotomy position A nurse introduces two Simon s specula I seize the cervix with a strong Muzeux forceps, and with a large curved scissors rapidly divide the vaginal mucous membrane freely all round above the grasp of the forceps The nurse then removes the specula, without having touched the parts with my hands *I cast the scissors aside* and the forceps is left *in position*

The patient is then placed in the supine position, the dressing is removed, and the skin is finally washed with alcoholic mercurial lotion As I usually operate with two assistants I may mention that up to this stage they have not taken any part in the procedure Sterilised mercurial towels are placed around the field and fixed in position by four of Mr Arbuthnot Lane s most useful tissue forceps The abdomen is then opened the womb differentiated, and the peritoneal cavity packed off with large Turkey sponges I now direct a nurse (not one of my two assistants) to pass her hand up between *the patient s legs* under *cover of the sterilised towel grasp* the Muzeux forceps and push firmly upwards The result of this simple manœuvre is practically to render the operation of hysterectomy a superficial business and obviate in a large percentage of cases the necessity for the Trendelenburg position which ought to be avoided as much as possible as I have on several occasions seen considerable shock follow its adoption This can only be accounted for by the huddling upwards of the abdominal contents A successful issue often depends on a dry pelvis and I am unable to follow the reasoning of some continental surgeons who leave shed blood to be absorbed by the peritoneum

The vesical peritoneal reflection is next divided transversely and the bladder is freely separated from the uterus The womb is then pulled well forwards by an assistant while I transversely divide and free the peritoneum on the posterior surface as low down as seems convenient The ovarian and the round ligament segments of the broad ligaments are ligated and divided *then an assistant draws the womb* to one side and the nurse is now told to push up the forceps firmly while I divide the remaining portion of the broad ligaments close to the uterus until I expose the head of the Muzeux forceps As each branch of the uterine artery is divided it is seized with a Lane s artery forceps The [illegible] to [illegible] I [illegible] and proceed to suture the peritoneal flaps Before closing the abdomen I always devote a few minutes to inspection of the work done and take care to leave the pelvic basin clean and dry

As to ligature material my custom is to use silk inside a clean peritoneum and slippery catgut outside I find that very little blood is lost by this method and all clamping and mass ligaturing *in the dangerous uteric zone are avoided* by the application of a forceps to each vessel as it is divided *I feel confident that if any surgeon wishes to try* this plan he will find the uterine vessels very easy to deal with

My reasons for advocating panhysterectomy are as follows 1 In a considerable number of the patients on whom I found it necessary to perform hysterectomy for fibroid disease there co existed some cervical lesion such as laceration, glandular hypertrophy or chronic endo cervicitis, and I could not quite reconcile myself to the idea that the retention of a diseased stump was expedient 2 In the condition described by Mr J Bland Sutton as fibrosis it would be puerile to remove the body and leave the neck 3 In some cases we are compelled to remain in doubt as to the nature of the tumour until after a post-operative microscopic examination; a mistake on the wrong side would be nasty. 4. The development of cancer in the derelict stump is not unknown. 5. In cases of cancer and cervical fibroids panhysterectomy has to be performed. 6. If parametric drainage should be required I do not consider the stump of the cervix an ideal drain—i.e., an aseptic one providing free and spontaneous drainage. 7. I have found by experience that vaginal hernia does not take place if the vaginal wound is sutured and rarely does so even when this detail is omitted.

Buenos Ayres.

MENINGEAL INFECTION BY THE DIPLOCOCCUS PNEUMONIÆ, SIMULATING INFECTIVE CEREBRO-SPINAL MENINGITIS.

BY W. G. BARRAS, M.D. GLASG., L.S.SC. DURH., D.P.H.,
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THE clinical history of the following case presents several features of unique interest analogous to those met with in some cases of epidemic or infective cerebro-spinal meningitis, but differing from the latter in that it was due to an accidental and somewhat unusual infection by the diplococcus pneumoniæ. As will be observed from the clinical data, supplemented by the results of the post-mortem and bacteriological examinations, the case is one which is instructive, in so far as it is reasonable to suppose that cases of a similar nature in which the diagnosis is that of ordinary meningitis might be due to a like infection.

The patient, a boy, aged five years, was at school until April 11th apparently in good health, but on the morning of the 12th he complained of severe headache accompanied by persistent vomiting, and when seen by me on the 14th these symptoms still continued, besides which he was exceedingly restless, throwing his head back, tossing about in bed, grasping his head between his hands as if in severe pain, and clutching at his throat. At this stage the pupils were widely dilated. As the case was regarded as one of meningitis of rather an obscure nature he was removed to the Elder Cottage Hospital, Govan, by which time he had become comatose.

I have here to express my thanks to Dr. Hunter, physician to the hospital, for kindly furnishing me with the following history of the case from his admission until his death on April 16th, as well as for the results of the post-mortem examination of the head. On the afternoon of the 14th the patient was admitted to hospital in an unconscious condition. At first he was restless, tossing about in bed, and muttering constantly. Once or twice he asked for milk and showed doubtful recognition of his mother for a moment. There was marked hypersensitiveness to sound and to touch. The pupils were widely dilated and did not react to light. The plantar reflexes were normal. The heart and lungs were normal. The breath was markedly offensive, the odour being suggestive of what is found in diabetic coma. The lips were rather livid and cracked. The tongue was dry with some brownish fur on the dorsum. The urine, which was passed involuntarily, was loaded with urates but showed no trace of albumin or sugar. The bowels had not been moved for about 30 hours but an enema brought away rather a large motion with some hard masses. Difficulty was experienced in getting him to swallow food or medicine and recourse was had to rectal feeding. The temperature taken in the rectum on admission was 103·8° F., there being considerable oscillation, it once falling to 98·6° within 24 hours of admission, but ranged mostly between 101·2° and 103·6°. Just before death it rose to 106° in the axilla. The pulse varied in rate considerably from 104 to 142 per minute, being always compressible and at times counted with difficulty. Respiration never showed a cerebral character and ranged from 34 to 42 per minute. The pupils within 24 hours of admission became rather small and reacted readily to light and so remained. Tremor was noted in the muscles of the arms and there was marked orthotonos of the neck and upper dorsal region. Unconsciousness gradually deepened and the patient died about 40 hours after admission, the duration of the illness being about five days.

Necropsy.—A post-mortem examination was made of the head. The skull was rather thin. The dura mater was normal. The pia mater throughout was deeply congested and there was very little serous effusion on the surface of the brain. Over almost the whole convexity and base of the brain fibrinous pus was noted. The spinal cord was not specially examined but the part removed with the brain seemed less deeply injected and no pus was found on its surface. There was no trace of tubercle.

With regard to his previous history the boy had hitherto enjoyed good health, with the exception of measles and whooping-cough when about 12 months old. A physical peculiarity remarked upon by his mother was that he had a very short neck. As to the family history, the father is in good health but the mother is of a nervous temperament and is frequently subject to attacks of hysteria. The other members of the family, four in number, are all alive, although one sister at the age of 15 months suffered from convulsions and has been very nervous ever since. Another sister at the age of nine months had an attack of inflammation of the brain.

Bacteriological examination.—Cover-glass specimens prepared from the meningeal exudate showed in every instance large numbers of capsulated and extracellular diplococci. These were readily stained by the ordinary aniline dyes as well as by Gram's method. The diplococci were also well seen in smear preparations from the brain tissue. From these facts the conclusion arrived at was that the illness in question was a meningitis the result of infection by the diplococcus pneumoniæ. In such cases, however, the inflammatory condition is generally secondary to an attack of acute lobar pneumonia, as a result of extension from disease of the nose and ear, or from the effects of an injury to the skull. In this case, however, no such conditions existed and it can therefore only be regarded as a primary pneumococcic infection. The symptoms during life at one time gave rise to the suspicion that it might possibly be due to the diplococcus intracellularis meningitidis of Weichselbaum, but this view of the case was not borne out as a result of the bacteriological investigation.

Govan.

HÆMORRHAGIC SMALL-POX:

A CLINICAL NOTE OF 36 CASES.

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THE frequency with which cases of hæmorrhagic small-pox properly so-called occur varies in different epidemics. Of 1200 cases of small-pox treated at Dagenham Hospital during the epidemic of 1902 36 belonged to this variety—i.e., 3 per cent. of all cases. It is convenient to recognise three types of this condition—viz: Type 1, characterised by the appearance during the initial stage of the disease of hæmorrhagic changes in the skin and visible mucous membranes, resulting in the production of petechiæ and ecchymoses, the patient almost invariably dying before the characteristic small-pox eruption has had time to declare itself; Type 2, including all cases in which the hæmorrhagic element involves not only the region of the pock but areas free from eruption; and Type 3, those cases in which the area of the pock alone is involved. In all three it is important to remember that, in addition to the production of petechiæ, the hæmorrhages may assume the form of epistaxis, hæmoptysis, hæmaturia, hæmatemesis, or melæna. The "pseudo-hæmorrhagic" case of the text-book is excluded from the present survey, as it displays none of the special features of the hæmorrhagic case proper. We shall consider each type separately.

Type 1.—Five cases belonged to this variety. Authorities appear to be unanimous in the view that the condition occurs almost exclusively in adults who had previously been robust and vigorous. The writer in Allbutt's System is of opinion that men are more frequently affected than women, whereas the writer in Nothnagel's Encyclopædia is responsible for the opinion that women are more often the victims, especially pregnant and puerperal women. The average age of our cases was 37 years, the youngest being

15 and the oldest 72 years. Four were women, but none of these were pregnant nor in the puerperium. All were of average physique and had previously enjoyed good health. The writer in Allbutt's System mentions that the condition is usually found in vaccinated persons. This is probably merely a coincidence; for he goes on to state that he has never found it in a person who had recently been vaccinated and presented a third of a square inch of well-foveated vaccination cicatrix.[1] The five cases under consideration had all been vaccinated, and four of [illegible] as having been "well vaccinated"—i. [illegible] more scars which were distinctly pitte[illegible] in all cases been neglected. All ended fatally, the average duration of illness being only four and a half days. The most severe case was that of a woman who died on the second day of her illness.

Clinical note.—The state of the patient on admission was in all these cases much the same. Extreme prostration with absolute flaccidity of the whole muscular system and blunting of the intellectual functions were prominent features. Delirium of the low muttering, asthenic type was evident in all from the date of admission till death. The unclouded mind, regarded by many authorities as a peculiarity of this type of small-pox, was not observed. In all the patients the special hæmorrhagic symptoms were in full evidence on admission. In one only—a woman aged 72 years—the hæmorrhagic change, so far as external evidence showed, did not involve internal organs. Vomiting in an aggravated form occurred in one case only. The other four patients took nourishment well and were able to retain it. Considering the profound degree of the asthenia which characterised the cases the state of the heart was wonderfully good. The pulse varied from 120 to 140 per minute, was of fair tension, and rarely displayed any marked irregularity. This state of things continued until perhaps an hour or two before death, which appeared to be due to syncope. When circulatory failure did occur it came suddenly and was complete. In none of the cases was there any œdema of the face or other parts. There were no physical signs in the chest to suggest the presence of lung mischief. The respirations, however, were hurried. Osler appears to regard this acceleration of respiration in the absence of physical signs in the chest in conjunction with the comparatively moderate degree of pyrexia as of some diagnostic value.[2] From a composite chart of the five cases one observed that on the evening of the second day in hospital a temperature of 101·2° F. occurred with respirations at 48 per minute, and on the third day a temperature of 99° with respirations at 64.

Type 2.—21 cases belonged to this variety. It is said to occur most frequently in the debilitated, the alcoholic, &c., and men are reported to be affected more often than women (Nothnagel). 14 of our cases were men and several of them were big, robust fellows who had previously enjoyed good health and led regular lives. 14 had been vaccinated in infancy, nine of these having been "well vaccinated." All had failed to be revaccinated, and it is noteworthy that the two youngest patients, aged three and six years respectively, had never been vaccinated. All died, the average duration of illness being 6·9 days.

Clinical note.—On admission the general aspect of patients belonging to this group was one of intense fatigue. When not actually delirious they exhibited the same tiredness of intellect which characterised their bodily functions. Prostration was quite as profound as in the last group. Many complained of headache and backache; some complained of discomfort in the region of the stomach, and this was sometimes accompanied by vomiting. All had evidence on admission of the hæmorrhagic changes. In ten cases these manifestations became extreme. In four there was an entire absence of internal hæmorrhages. Indeed, these did not appear to have any relation to the virulence of the attack, for in the severest case of the group they were conspicuous by their absence. The typical small-pox rash was of the confluent variety, and in the case of the patient who lived longest it reached a condition of filmy vesiculation—confluent both on face and trunk. Delirium was a pretty constant symptom in this type of case. At first active and often dangerous—although the patient was incapable of any very sustained effort—it assumed the adynamic type towards the close. In only two cases was the symptom absent throughout their illness. Alert and full of apprehension, these men seemed to realise fully the extreme gravity of their condition. The heart did not at first give any sign of greatly failing power. The pulse varied from 110 to 130 and was regular—the tension being better and the vessel fuller than in Type 1. A few hours before death it became very weak, however, and death appeared to be due to syncope. The signs of circulatory failure appeared somewhat earlier relatively than in Type 1. In a few, towards the end of the illness, there was some œdema, especially of the face, but never very pronounced. A study of a composite chart of all [illegible] showed an evening temperature of 101° or 102°, [illegible] pirations increasing from 26 on admission to 48 [illegible]ath.

Type 3.—Ten cases were of this variety. The average age was 26·8 years and the condition was equally distributed between the sexes. Two patients, aged respectively six and 14 years, had never been vaccinated, and of the others all with one exception had been vaccinated in infancy. Six had been "well vaccinated"; and it is worthy of mention that the only case of recovery was that of a man, aged 30 years, who exhibited five very distinct vaccination marks. He remained in hospital 41 days. One patient, aged 30 years, gave a history of having been revaccinated six days before the onset of his illness, and he died on the twelfth day of the disease. The operation as performed in infancy had been imperfect, the scars being faint and indistinct and of small area. A patient, aged 28 years, stated that she had been vaccinated for the first time ten years previously. The scars, however, were very faint and the patient died on the eleventh day of her illness. The average duration of the illness in the nine fatal cases was 10·7 days.

Clinical note.—The cases belonging to this group usually presented, on admission, the appearance of the early stage of confluent small-pox, and there was an entire absence of evidence to suggest that graver changes were impending. The initial symptoms had been severe, especially the headache and backache. As a rule the patient was in the full possession of his mental faculties. By the end of the third day of his illness the rash on the forehead had reached a condition of full papulation, the individual papules merging over large areas. A few hours later commencing vesicular changes were visible. In the course of the next 24 hours, as a rule, the hæmorrhagic element had declared itself by a darkening of the vesicles and the development of a petechial ring round individual vesicles or groups of vesicles. According to the severity of the case the changes were limited to the extremities or involved the trunk as well. With their advent the aspect and whole demeanour of the patient approached that of the last type. He became restless and anxious, and if he retained his intellectual faculties he seemed to anticipate a fatal issue. In five cases delirium was absent. When it occurred it appeared late and was of the low type and lasted until the death of the patient. Hæmorrhage from internal organs was less common than in the last two types, being entirely absent in five cases. The general condition of the circulation was good for the first few days. In the later stages the pulse became irregular and weak, increasing in frequency from 110 to 140 per minute. This condition of circulatory weakness lasted longer than in the former two types. Œdema of the face, &c., was prominent in most cases. Death did not appear so clearly to be due to syncope as to a general exhaustion the result of the profound toxæmia.

On glancing at the cases as a whole one or two facts remain to be recorded. In the first place, the unvaccinated person suffering from small-pox appears to be more liable to this type of the disease than the vaccinated. In the present instance 3·3 per cent. of unvaccinated cases suffered from the hæmorrhagic type, as against 3·1 per cent. of the vaccinated. Further, the young tend to escape—only three out of the 36 cases being under ten years. Out of a total of 1200 cases of small-pox there were 198 persons under the age of ten, practically all of them being unvaccinated; 1·5 per cent. of these suffered from the hæmorrhagic variety, as against 3·3 per cent. of all cases over that age. The average age for the whole series is 32·4 years. Men were more frequently affected than women, in the proportion of 20 to 16. An interesting fact which ought not to escape notice was the voraciousness of the patient's appetite and his ability to retain and utilise nourishment. In a few cases gastric derangement with vomiting was prominent and even in these cases one noted an anxiety for the food which they were unable to retain. This seemed to be a characteristic of small-pox patients in general and the increased gravity of this particular type did not appear to diminish the desire for nutriment.

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[1] Allbutt's System of Medicine, vol. ii., p. 204.

[2] Osler's Principles of Medicine, p. 63.

FORMALDEHYDE IN MILK.

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IN view of the recent outbreak of "epidemic skin disease"[1] the accurate estimation of formalin[2] in milk becomes a matter of considerable importance and the object of the present paper is to recommend to notice the following process which will be found to give trustworthy results. The method depends on the pink colour which develops when fuchsine decolourised with sulphurous acid (Schiff's reagent) is added to the clear filtrate obtained after the precipitation of casein and fat from diluted milk. It has long been known[3] that if milk is diluted and acidified the whole of the casein and fat may be precipitated, leaving a clear liquid on filtration. I first made experiments to see if milk containing formalin would retain the preservative on being subjected to this treatment and also if the depth of colour given by the Schiff's reagent was in proportion to the amount of preservative present. These preliminary tests were entirely satisfactory and I have since worked out the process in detail as follows.

To precipitate the casein and fat from milk.—To estimate formaldehyde by this process it is essential to obtain a perfectly clear filtrate from the milk and after numerous experiments the following is the method which I have found to answer best. 50 cubic centimetres of the sample are measured out into a tall cylindrical glass of 250 cubic centimetres capacity, the glass is filled up to the 250 cubic centimetre mark with water, the milk and water are well mixed together, and then is added 0·4 cubic centimetre of a 25 per cent. solution of sulphuric acid. The mixture is well agitated with a glass rod for a minute or so. The casein and fat will then separate as a coarse precipitate, leaving a more or less clear liquid at the top. The precipitate is allowed to settle for about five minutes and then the liquid is filtered. I use a large funnel of four and a half inches diameter with Chardin filtering paper which must first be well wetted. In the majority of samples the filtrate will come through quite clear but occasionally it will be opalescent or even milky; when this happens the remainder of the 250 cubic centimetres should be poured on to the filter and it will be found that after about 100 cubic centimetres have gone through the filtrate will become quite clear; this is owing to the precipitate itself lining the inside of the filter and increasing the filtering power of the paper. By attention to these details I have never had any difficulty with fresh milk and have often been successful with milk a day old, but, as I shall presently point out, for reasons connected with the rapid disappearance of the formaldehyde, whenever possible the analysis should be conducted on the day the sample is purchased.

Preparation of the Schiff's reagent.—One gramme of ordinary crystalline fuchsine (*not* the acid fuchsine) is weighed out and placed in a 50 cubic centimetre flask, which is filled up to the mark on the neck with a cold *saturated* solution of sulphurous acid in water. The sulphurous acid solution may be conveniently prepared by means of a syphon of the compressed gas. After standing for several hours the fuchsine loses its colour and goes into solution, the liquid assuming a light yellow tint. Then the 50 cubic centimetres are diluted to one litre with distilled water and proceed as follows. Two Nessler glasses are taken, to one of them is added 0·5 cubic centimetre of a 1 in 1000 dilution of formalin, and both glasses are filled up to the 50 cubic centimetre mark with water; then five cubic centimetres of the Schiff's reagent are added to each glass, which is stirred and allowed to stand for ten minutes. It will be found that both Nessler glasses show a marked pink colour—that is to say, that at this stage the simple dilution of the reagent with water will give a similar reaction to the formaldehyde. To make the Schiff's reagent sensitive sulphurous acid gas is bubbled in from the syphon for about ten seconds at a time until a point is reached when it will react in the Nessler glass containing formalin, but not with the plain water after standing for ten minutes. If the reagent is too strongly impregnated with sulphurous acid it will cease to react to the formalin and hence the care required in conducting these operations. I find that 250 cubic centimetres of the Schiff's reagent prepared as above (0·1 per cent. fuchsine) will be made sensitive by bubbling in the gas at a medium rate for about 30 or 40 seconds.

Application of test.—50 cubic centimetres of the clear filtrate from the sample of milk are poured into a Nessler glass, five cubic centimetres of the Schiff's reagent are added, and the mixture is allowed to stand for ten minutes. In estimating small traces of formaldehyde, which may readily be done if the Schiff's reagent is sufficiently sensitive, it is advisable to allow the liquid to stand for a longer period—that is to say, for half an hour or even an hour. To estimate the exact percentage of formaldehyde a number of standards must be prepared of known amounts of formalin added to milk. Each standard is treated by precipitation, filtration, &c., in precisely the same manner as the sample. The Schiff's reagent is then added and the colour of the sample in the Nessler glass is matched with the nearest standard. In ordinary milk adulteration I should expect to find from 0·002 to 0·001 per cent. of formaldehyde and should make up eight standards containing 0·002 per cent., 0·001 per cent., with six intermediate percentages. If the Schiff's reagent is already prepared the whole analysis, including the precipitation, filtration, &c., of the eight standards can easily be completed within the hour.

The following experiments were carried out to show for how long after the addition of the formalin it is possible to detect it in the milk:—

TABLE I.

Percentage of formaldehyde added to milk.	Percentage of formaldehyde detected—					
	After 5 hours.	After 21 hours.	After 29 hours.	After 45 hours.	After 53 hours.	After 72 hours.
0·0055	0·0047	0 0047	0·0045	0·0032	0·0024	0 0001
0·004	0 004	0·0034	0·00285	0·0017	0·00135	0·00005
0·0025	0·0017	0 0017	0·0016	0·00037	0·00017	None found.
0·001	0·00083	0·00025	None found.	None found.	None found.	None found.

The temperature taken at the time of the experiments varied from 21° to 23° C. It will be observed from the table that the length of time formalin may be detected in the milk depends on the amount added. Thus with 0·0055 per cent. or 0·004 per cent. a considerable proportion was present at the end of 53 hours. With 0·0025 per cent. a large quantity remained for 29 hours, while in the case of 0·001 per cent. almost all the preservative had disappeared by the following day. Table II. is a record of a further series of similar observations.

TABLE II.

Percentage of formaldehyde added to milk.	Percentage of formaldehyde detected—		
	After 5 hours.	After 24 hours.	After 48 hours.
0·005	0·005	0·00375	0·00025
0·0025	0 00156	0·0015	0·00020
0·001	0·0008	0 00020	None found.

These results agree generally with those given in Table I.; the formaldehyde, however, disappeared more rapidly. This was in all probability due to the warm weather experienced at the time that the experiments were conducted (from 24° to 27° C.).

The next table gives estimations of the lactic acid and must be considered in conjunction with Table II. The observations recorded in the two tables were carried out under precisely similar conditions. Thus they were made at the same time, on the same morning's milk, and the percentages of formaldehyde added in each case were identical. The object of these experiments was to discover whether the inability to detect formalin after certain intervals of time was accompanied by any loss of preservative power as shown by excess of lactic acid. The acidity was determined by titration with one-tenth normal caustic potash using phenol phthallein as an indicator and calculated as lactic acid. The figures for unpreserved milk are given as a control. At the time of purchase the milk exhibited *an acidity of 0·099* per cent. calculated as *lactic* acid.

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[1] See Dr. Monckton Copeman's Report to the Local Government Board on an Outbreak of Epidemic Skin Disease at the Central London Sick Asylum, Hendon, No. 194, April 19th, 1904.

[2] Solution of 40 per cent. formaldehyde in water.

[3] See "A Course of Practical Elementary Physiology," p. 121. Foster and Langley, 1880.

TABLE III.

—	Percentage of acidity calculated as lactic acid.		
	After 5 hours.	After 24 hours.	After 48 hours.
Unpreserved milk	0·198	0·658	0·720
Milk 0·005 per cent. formaldehyde	0·144	0·184	0·697
Milk 0·0025 per cent. formaldehyde	0·144	0·261	0·810
Milk 0·001 per cent. formaldehyde	0·135	0·693	0·733

On comparing Tables II. and III. it will be found that when formaldehyde is present it checks the development of the lactic acid. Thus after 24 hours 0·005 per cent. formaldehyde becomes 0·00375 per cent. and is associated with 0·184 per cent. lactic acid, but on the further reduction of the formaldehyde at the end of 48 hours to 0·00025 per cent. the lactic acid is increased to 0·697 per cent. This shows that after a lapse of time formalin in milk not only ceases to respond to chemical tests but also loses its preservative powers, thus indicating that in all probability it undergoes some fundamental change.

Southwark, S.E.

TWO CASES OF POISONING BY MUSSELS—ONE FATAL.

BY R. ROLFE, M.B., B.C. CANTAB.,

MEDICAL OFFICER TO THE NEW DOCK HOSPITAL, AVONMOUTH.

ON the afternoon of July 13th two sailors, one aged 57 years and the other aged 70 years, gathered some mussels from a dock gate. It was known that the water was polluted by sewage but in spite of this the inhabitants of the place often ate shell fish gathered from this situation. The mussels were carefully washed and cooked thoroughly in several changes of water. They were then eaten, flavoured with salt and vinegar. About four hours after the meal both men were seized with giddiness. They described the feeling as like that of gradually wading into water out of their depth. Their legs became unsteady and they felt as if "they could fly." They were soon unable to stand and were taken below and medical aid was summoned. The first-named patient vomited several times. When first seen the signs and symptoms were much alike in both cases. The patients complained of giddiness and were unable to sit up in bed. They had slight abdominal pain. There was mental excitement and the condition resembled closely the early stages of alcoholism. The pulse was full and bounding but not increased in rapidity, being 76 in one case and 80 in the other. The heart sounds were clear and loud. The temperature was normal. There was numbness of the extremities, especially the hands, and sensation was much diminished. The elbow and knee reflexes were present and not exaggerated. The pupils were dilated but reacted to light. In both cases the abdomen was distended and tympanitic but there was only very slight tenderness on firm palpation in the epigastric region. As it was now five hours after the eating of the mussels the stomachs were not washed out but a moderate dose, one and a half ounces of oleum ricini was given in spirit. Both men, however, began to experience dryness in the throat and a feeling of constriction in the neck. Quite suddenly the first named patient had an attack of syncope and died. The symptoms in the case of the other patient grew gradually worse. His abdomen became more and more distended and he was slightly delirious and was with difficulty restrained in bed. At each attempt to rise a syncopal attack was brought on and he *complained much of difficulty in* breathing. This difficulty was

cold compresses on the neck

applied to the abdomen to relieve

much result. Hot strong coffee was given by the mouth but the patient had the greatest difficulty in swallowing it and very small quantities had to be given at a time. The effect was very marked, the patient feeling much better after each drink, but this result was transient and the coffee had to be repeated frequently—about every half hour. Aromatic spirit of ammonia was given in a half-drachm dose in hopes of relieving the abdominal distension, but though the spirit was diluted to one ounce a bad result was produced, the patient nearly choking and a syncopal attack following. As the oleum ricini showed no signs of acting after six hours a large soap and water enema was administered with good result. The patient felt much better after this and was able to be removed to the Avonmouth Cottage Hospital. On admission a draught containing saline aperients and cascara was given but no result was produced in three hours, so further enemata were resorted to. Under this treatment the patient made rapid improvement. The tongue, which had become very furred and dry, cleared and the restlessness passed off and the patient fell asleep. On awaking he complained of headache and giddiness, but these symptoms passed off in two days. On admission his urine contained half albumin; on the next day this amount had diminished to one third and on the following morning to less than one sixth. When seen four days afterwards the patient felt quite well. The urine still contained a trace of albumin but this may be accounted for by old kidney disease. The patient admitted that he had suffered from Bright's disease.

The post-mortem examination of the first named patient revealed nothing special. The usual signs of heart failure were present and the heart was even more flabby than is generally the case. The mucous membrane of the stomach, the duodenum, and upper part of the jejunum was pale. The brain was also anæmic. There was no macroscopic change in the kidneys, which appeared quite healthy, nor was the spleen enlarged. The urine drawn from the bladder con-

cases were (1) the difficulty

the system, as neither flatus

under the influence of purgatives, the gut appearing to be paralysed; (2) the tendency to syncope if the patients attempted to sit up; (3) the afebrile course—in neither case did the temperature rise above normal; (4) the comparative infrequency of the pulse, which never rose above 80 even when syncope threatened; and (5) the marked beneficial effect of coffee on the pulse and on the general condition of the patient. It is curious to note that the first named patient, who was 13 years younger than the second, who vomited freely comparatively soon after eating the mussels, and who had presumably healthy kidneys, succumbed to the toxins which the other resisted. Both men had eaten about the same number of fish.

Avonmouth, Gloucestershire.

A NEW PATHOGENIC BACTERIUM CAUSING BASAL MENINGITIS IN INFANTS.

BY W. D'ESTE EMERY, M.D., B.SC. LOND.,

CLINICAL PATHOLOGIST TO KING'S COLLEGE HOSPITAL; PATHOLOGIST TO THE CHILDREN'S HOSPITAL, PADDINGTON GREEN.

CASE 1.—A male, aged one year and ten months, was admitted to the Paddington Green Children's Hospital, under the care of Dr. Guthrie, with a history of six days' illness, the symptoms being drowsiness and vomiting. There was no history of otorrhœa. When admitted he was apathetic and drowsy but not comatose and apparently not in pain. There was no squint and the pupils were contracted but reacted to light. There were no convulsions and no rigidities; the reflexes were normal. Kernig's sign was not given. There was a well-marked tache. Three days after admission there was definite retraction of the head and the patient had several convulsive fits with general rigidity of the body and limbs and conjugate deviation of the head and eyes to the left. On the next day there was internal squint of the left eye and the pupils were dilated and did not react to light. Six days after admission the respiration was affected, becoming sighing and irregular. The eyes were examined and the retinal vessels were found to be congested; the discs were pale, with indistinct edges. The convulsions ceased. Eight days after admission lumbar puncture was performed. The fluid was quite clear and contained but a trace of albumin. The microscopical appearance of films from the deposit of the lumbar puncture fluid and the result of cultures will be described below. The temperature on admission was about 100°F. and rose gradually and fairly uniformly until death occurred, reaching 104° as its maximum. The child died nine days after admission, or 15 days after the onset of the disease, and the day before death seemed to suffer from pain in the left ear.

Necropsy.—At the post-mortem examination extensive basilar meningitis was found. There were large and thick collections of greenish lymph of gelatinous consistency in the region of the anterior perforated space, the tips of the temporo-sphenoidal lobes, and under the central lobe of the cerebellum, but thinner sheets of the same material united these main collections and extended along the vessels, especially in the Sylvian fissure. The condition was practically symmetrical. The surface of the brain was hyperæmic and the convolutions were flattened. The ventricles were moderately distended with fluid which was colourless and slightly turbid. The right middle ear was normal, containing only the mucoid material so commonly seen in young children. The left contained thick pus. The membrane was intact on both sides. The sinuses were normal. Cultures and films were made from the cerebral pus and films were made from the pus in the left middle ear. There were no other morbid appearances in the body except that the retroperitoneal and mesenteric glands were enlarged but apparently not tuberculous. The films prepared from the cerebro-spinal fluid obtained by lumbar puncture showed but few cells, those present being mostly degenerated endothelial plaques. They showed vast numbers of organisms which were so variable in shape and size as to indicate the presence of a large number of species. The prevailing form was a diplococcus which varied greatly in size, the smallest forms being no larger than meningococci whilst the largest were fully three times that size. The individual cocci were quite round, or more frequently short cylinders with rounded angles. There were also single coccoid forms, often of large size (3μ or 4μ in diameter). Lastly, there were numerous bacillary forms which resembled the individual cylindrical cocci mentioned above but in which the length was three or four times greater than the breadth. They showed very marked polar staining. There was no sign of spore formation. Slight indications of the presence of a narrow capsule occurred but this might have been an artefact. The organisms did not stain by Gram. They were almost entirely extracellular. The culture was prepared by allowing the fluid to flow directly from the needle on to ordinary agar and after 24 hours' incubation presented numerous isolated colonies. Three of these were common air organisms (two of sarcina alba and one of micrococcus roseus) whilst the remainder were similar to one another and of a greyish-white colour. Films prepared from these latter colonies showed the presence of an organism exactly resembling those seen in the films except that coccoid and bacillary forms predominated, the diplococcoid form being comparatively infrequent. Some giant diplococci of large size and great affinity for stains were present. The appearances of the colonies indicated that they were pure but they have been repeatedly plated out without losing any of their characteristics. The films made from the pus from the ear and from the meningeal exudate showed organisms exactly like those seen in the lumbar puncture fluid, but unfortunately no cultures were made.

CASE 2.—A male, aged nine months, was admitted to the Paddington Green Children's Hospital under the care of Dr. Sutherland, having been ill for one month. The illness began by convulsions and vomiting. The latter continued but the former passed off and was replaced by twitchings of the hand and head. Four days before admission his neck became stiff. On admission the child was conscious but apathetic; he lay on his back with his legs in a position of flexion. The pupils were moderately contracted and reacted well and there was no squint. There was a slight nasal discharge. The tympanic membranes were examined and appeared to be healthy. There was a slight tache and Kernig's sign was present on both sides. There was occasional vomiting. After a day or two in hospital he became extremely restless, with constant twitching of the extremities, cerebral breathing became marked, and the abdomen became retracted, whilst the rigidity of the neck increased. Eight days after admission lumbar puncture was performed. The fluid had a yellowish tinge and contained a large quantity of albumin. From this point the child steadily went downhill and died 19 days after admission, or about seven weeks from the onset of the disease. The temperature on admission was about 98° F., with occasional brief excursions to 100° or thereabouts. It rose gradually until it averaged about 101° and remained so until 36 hours before death, when it suddenly rose to 107°.

Necropsy.—The post-mortem appearances in this case were quite similar to those in the foregoing but more marked. Large masses of creamy, greenish-yellow pus occurred beneath the pia mater at the anterior perforated space and the tips of the temporo-sphenoidal lobes whilst there was but little on the lower surface of the crura and cerebellum. The pus tracked alongside the vessels on to the hemispheres but not to so great an extent as in the previous case. Here, however, there was a great excess of turbid fluid in the pia-arachnoid space at the base of the brain, a condition which did not occur in the previous case. The convolutions were flattened and the meninges over them were hyperæmic. The ventricles were greatly distended with turbid fluid and contained coagulated masses of creamy, yellowish-green pus. The lining membrane of the whole ventricular system was injected and apparently œdematous, yet moderately tough; it could be readily peeled away from the subjacent tissues and had the general appearance of granulation tissue. The iter was greatly dilated. The spinal cord was also affected, a layer of greenish pus extending down the dorsal surface as far as the conus medullaris. The middle ears were full of greenish pus similar to that seen in the brain and the membranes were intact. There was no thrombosis of sinuses. The abdominal lymph glands were enlarged but not caseous. Nothing else abnormal was noticed. Cultures and films were made from the pus from the brain and ears. The films prepared from the lumbar puncture fluid in this case were richer in cells than in the foregoing, highly degenerated polynuclears being present as well as endothelial cells. Here also there were vast numbers of organisms, the predominating form being a bacillus which was about as wide as those present in the previous case, or a little narrower, and of very variable length; the shorter forms were but slightly longer than they were wide, and the longest forms were leptothricial filaments reaching a third of the way across the field of a $\frac{1}{12}$ inch lens. In the more abundant forms the length was about four or five times the breadth. Polar staining was fairly well marked, there was no spore formation, and they did not stain by Gram. They were mostly extracellular, though clustered about the cells, but in a few cases they seemed to be engulfed and to lie in vacuoles in the protoplasm. There was the same doubtful appearance of capsulation. In this case coccoid and diplococcoid forms occurred, but were uncommon. In the films prepared from the pus from the ears and meninges of this case similar bacteria were seen but were much less numerous; here also the bacillary forms predominated, though large diplococcoid forms occurred. Capsulation was better marked.

So different were the appearances of the organisms in the above cases that their identity was hardly suspected until cultures made from the meningeal and tympanic pus were examined. These showed abundant growth in 24 hours and both were pure, presenting on microscopic examination appearances identical with those seen in the culture from the lumbar puncture fluid in the first case. The cultural characters have not been worked out in full but the following features will probably suffice for the recognition of the organism. The growth on agar at 37° C. was extremely rapid, isolated colonies acquiring a diameter of three or four millimetres or even more in 24 hours. They were white or greyish-white in colour, opaque, and were circular in shape and often had slightly raised edges. They rapidly extended and the whole surface of the medium was soon covered with a uniform whitish layer. Streak cultures on agar showed a similar flat growth which spread quickly. The organism grew well on gelatin at the ordinary temperatures. Streak cultures showed a featureless ribbon-like growth similar to that seen on agar but without the same tendency to spread. Stab cultures were more characteristic. The growth was white or slightly grey and opaque. It extended to the bottom of the stab but was slightly more abundant at the top, whilst

on the free surface there was a rounded button of growth very similar to that seen in cultures of bacillus pneumoniæ The gelatin was not liquefied Growth in broth was not very abundant At first the medium was uniformly turbid, whilst after a time there was a slight deposit No scum was formed The microscopic appearances of the organisms from the cultures were on the whole similar to those seen in the lumbar puncture films in the first case, but there were minor
forms predominated and in
Diplococci also occurred
-tion of bacilli, some of them
quite long and in some cases clubbed or spindle shaped They stained uniformly or showed polar staining, and there were no spores The organism was non motile and did not stain by Gram

CASE 3 —This case does not call for prolonged notice The patient was a girl, aged two years and eight months, who was admitted to the Paddington Green Children's Hospital under the care of Dr Guthrie She was ill for 18 days with typical symptoms of meningitis Her temperature kept about 100° F until just before death, when it rose to 109° There were no signs of tubercle (except, perhaps, a few crepitations at the right base) and the condition was diagnosed as cerebro spinal meningitis Lumbar puncture fluid was almost clear and contained but little albumin It showed few cells and numerous organisms similar to those seen in the two cases described above No cultures were taken

Necropsy —At the post mortem examination there were extensive tuberculosis of the lungs and mesenteric and abdominal glands and tuberculous meningitis The ears contained muco pus Cultures were made from the meningeal exudate and from the pus in the ears and gave numerous colonies of the organisms described above, together with a few colonies of yellow and white staphylococci This was a secondary mixed infection, probably from the middle ears

The above cases 1 and 2—fatal cases of basal meningitis in infants which have occurred recently in the Paddington Green Children's Hospital—are of peculiar interest in that they were associated with, and appeared to be due to, an organism quite unlike any known pathogenic bacterium, whilst in a third case, one of tuberculous meningitis, the same organism greatly predominated in a mixed infection which took place before death The above is a brief account of the clinical history and post mortem appearances of these cases I reserve a fuller account of the pathogenic organism for a future occasion when its characters have been more fully investigated The two cases in which this organism was present in pure culture in the exudate in the cerebral and spinal meninges, and in the pus which was present in the middle ears, occurred within three weeks of one another Both patients came from the West of London but not from the same district, and there was no reason to suspect a common source of contagion

In the three cases mentioned above we find the organism was isolated in cultures once during life from the cerebrospinal fluid and twice after death from the meningeal exudate and also from the pus from the middle ear It was seen in films from the lumbar puncture fluid, from the meningeal lymph or pus, and from the tympanic pus in all cases It seems fairly certain that it must be regarded as being the cause of the disease in the first two cases and as an important secondary infection in the third The association of pus in the middle ear in all three cases and the presence therein of the same organism as was found in the brain is of some interest in connexion with the etiology of the disease and of meningitis in general It is, of course, impossible to say whether the brain was infected from the ear or *vice versâ* A point in favour of the view that the ear became infected secondarily is the fact that in the first case no pain in the ear was noted until the day before death, whilst in the second case there was a discharge from the nose, suggesting another possible source of infection It is very unfortunate that this discharge was not examined bacteriologically In this case, too, it is noteworthy that there was no notice of any symptoms point-

branes were found to be normal On the other hand, in the few cases of septic meningitis following injury in which I have had an opportunity to examine the ears there has been no suppuration, suggesting that a purulent inflammation does not easily travel in that direction.

I have to thank Dr Guthrie and Dr Sutherland for permission to publish these cases, and Mr Holland and Mr Gilford, house physicians to the hospital who performed the lumbar punctures and provided me with the materials thus obtained

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL

A CASE OF SURGICAL EMPHYSEMA AS A COMPLICATION OF DYSTOCIA

By WILLIAM M EMMERSON, L S A

THE patient in the following case was a primipara, aged 22 years, she was small but well built and well nourished and was in good health Labour commenced about 7 A M When I saw her at 9 A M labour pains had fairly set in, the membranes had ruptured and the size of the os was about that of a shilling Abdominal palpation established the fact of a head presentation but the position of the head could not be satisfactorily determined As the presenting part came within reach of the finger the mouth and nose were recognised, causing a face presentation to be diagnosed As the head was fixed, the pains good, and the pelvis fairly roomy I decided not to interfere with the presentation but leave the case to nature and two grains of pilula opii were administered At 7 P M the patient was in strong labour and the child's face was well down on the perineum Its *advance was now slow and the pains became violent*, birth taking place at 7 50 P M A few minutes prior to the birth the patient's appearance was normal, but immediately after the long and violent effort which expelled the fœtus her face was noticed to be much swollen and she complained of a choking sensation Her pulse was 110 per minute, weak but regular, and she was much exhausted I attributed the swelling to congestion, which I have before observed, but on the next day the face was still greatly swollen, as was also the neck the malar bones and prominence of the clavicles being obliterated She still complained of the choking sensation Palpation over the clavicles and bony parts of

On ex
the ribs
over the
note was normal all over There was no *bruit d'airain* or other sign of pneumothorax The pulse rate was still 110 and the temperature was 99 5° F The patient had slept fairly well and beyond the choking sensation there was no discomfort except slight shortness of breath The swelling and auscultatory phenomena gradually decreased and completely disappeared in four or five days' time With the exception of retention of urine, necessitating the use of the catheter for two days, convalescence was uneventful Careful subsequent examination of the chest revealed no alteration in the percussion note at the apices or elsewhere and no signs of tubercle The patient is now, after a lapse of two months, in her usual good health The condition was presumably due to rupture of air vesicles on one or both sides of the chest caused by the violent bearing down efforts, the air escaping into the neck at the root of the lung The patient was delivered of a stillborn fœtus with posterior hydrencephalocele and omphalocele

Hebburn on Tyne

A CASE OF EXTRAVASATION OF URINE

By THOMAS P CODD, L K Q C P, L R C S IREL

THE following case of extravasation of urine may interest some readers of THE LANCET

The patient was a man about 50 years of age who had for 21 years been suffering from traumatic stricture which occasionally caused retention of urine, but he was generally able to relieve himself by using a French bougie catheter No 4 He was a Spaniard and was once treated by a Greek medical man who told him when he could not pass urine to use a French bougie No 4 and after passing it down to the stricture to remove the stilet (if it did not pass through) and to let a little oil flow down through the catheter. He invariably passed it into the bladder, at the same time using it slowly and patiently. On July 13th, 1904, about 8 P.M. I was sent for and found him in bed with a number of pieces of absorbent wool saturated with arterial blood which was escaping from the urethra. He told me that while coming that afternoon from the North of Ireland in the train his bladder became over-distended and on getting out to pass urine he found himself at first unable to do so. He used all the force he could and felt something giving way; the urine then passed freely through the urethra and he obtained the greatest relief; blood afterwards came away and continued to escape for some hours until he sent for me. I prescribed rest and a mixture of ergot and opium, also ice to the perineum. On the next morning his wife sent word that the bleeding had stopped and that he had gone to business. He sent for me again in about ten days. I found him in bed with a quick, bounding pulse and a temperature of 101° F. The right testicle was swollen and tender. He told me that some years ago he had inflammation in the same testicle and had to apply three leeches which gave him relief. I did not care to use leeches, but I prescribed a lotion containing diluted solution of subacetate of lead which he applied for some days. On the inner side of the testicle a swelling came on gradually and eventually fluctuation could be felt. I recommended linseed poultices, not too large, which he kept on for a few days. I then made a free incision about an inch long in the scrotum whereupon watery fluid which had a very fetid odour gushed out, and after the opening was enlarged by Hilton's method there came out mixed blood and pus. I packed the wound with sal-alembroth absorbent gauze. On the next day the patient's temperature was 97° and his pulse-rate was 80; he had no difficulty in passing urine and felt quite comfortable. I syringed the wound daily with boric acid lotion and packed it with sal-alembroth absorbent gauze; it is now healing by granulation and the man has gone away for a change of air. I was surprised that the extravasation was not more extensive and that it came on so slowly.

This is an example of the danger of a patient forcing himself to pass urine when he is suffering from retention due to traumatic stricture and it might be of service for medical practitioners to caution patients in this respect. Happily such cases are rare, as this is only the second which I have seen after being in practice for 18 years.

Drumcondra, Dublin.

A Mirror
OF
HOSPITAL PRACTICE,
BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv., Proœmium.

ST. GEORGE'S HOSPITAL.

A CASE OF EXCISION OF THE RECTUM FOR CARCINOMA; DEATH 21½ YEARS LATER FROM SECONDARY DEPOSITS IN THE LIVER.

(Under the care of Mr. C. T. DENT.)

THE following case is a very remarkable one owing to the extraordinarily long period of time in which malignant disease lay dormant after the operation of excision of the rectum. 21½ years of freedom from recurrence should be noted in these days of hopeless pessimism in cancer problems. For the notes of the case we are indebted to Mr. T. Crisp English, surgical registrar.

The patient was operated upon by Mr. C. T. Dent in 1882 for carcinoma of the rectum, and the following is an extract of the notes taken upon the case at the time.

The patient, a man, aged 52 years, was admitted into St. George's Hospital under the care of the late Mr. J. Rouse on August 18th, 1882. He stated that he had suffered from "piles" for about two years but had had no serious trouble until two months before admission, when he became subject to a continual desire to strain and to go to the closet; there was great pain after motions, especially when he was at all constipated, and he had passed small quantities of blood and slime. The pain and tenesmus had steadily become more severe and he was rapidly losing strength and flesh. On admission there were seen small external piles, and on the posterior wall of the rectum was a hard lobulated mass about one inch in diameter; blood and mucus came away on the examining finger; there was great pain, especially on sitting down. On Sept. 1st, Mr. Rouse examined the rectum under an anæsthetic and found extensive glandular carcinoma of the posterior wall, but the patient was so ill that it was thought inadvisable even to perform a colotomy. The pain was at first relieved somewhat by morphine suppositories but the tenesmus remained very troublesome, blood and mucus continued to discharge in large quantities, and finally the pain became very severe. On Nov. 8th a consultation was held and operation was decided upon in the hope of affording some relief to the patient's symptoms. On the followday therefore an anæsthetic was given and Mr. Dent made a careful examination of the rectum. A large, hard, and somewhat nodulated mass of malignant disease was found on the posterior and left aspect of the bowel just inside the anus; with the finger it was just possible to reach healthy bowel above. The growth was evidently of some thickness, extending deeply into the left ischio-rectal fossa. Mr. Dent then excised the rectum by the perineal route; an incision was made round the anus and gradually deepened until the bowel was completely detached from its connexions; the lower five inches were removed, the peritoneal cavity being opened in the process; attempts to draw the bowel down to the level of the skin proved unsuccessful. Hard nodular remnants were then dissected out of the ischio-rectal fossa. For a day or two after the operation the patient was in a critical state and then made a steady recovery. The wound healed well but a strong tendency to contraction of the anal orifice caused some trouble. This was successfully treated by the regular passage of bougies and division of constricting bands. The patient rapidly picked up his strength and gained flesh and was sent to the convalescent home on March 18th, 1883. The excised rectum was unfortunately not examined microscopically, but there can be no doubt that it was a case of malignant disease far advanced and much ulcerated.

On five occasions during the next 18 months the patient was readmitted into hospital for severe diarrhœa and evidence of ulceration of the large intestine; there was marked tenderness along the whole of the colon. On each occasion he was greatly benefited by voluminous injections of strong silver nitrate solution. Eventually this trouble ceased and he remained in excellent health until the end of 1903, having full control of solid fæces and partial control of liquid fæces. *A short time before Christmas*, however, he found himself becoming weaker and his medical attendant, Dr. F. B. Thornton, discovered enlargement of the liver; there was no jaundice, vomiting, or melæna.

On Jan. 29th, 1904, he was readmitted into the hospital, being now 74 years old; he appeared in fair health although rather wasted and pale, but considering his age he was wonderfully vigorous; he complained of no pain. The anus was represented by a deep funnel-shaped depression which appeared perfectly healthy. At the site of the union of the divided bowel to the surrounding parts was a sphincter-like constriction which admitted the forefinger fairly easily; there was slight prolapse, just extending down to the ring, of perfectly healthy mucous membrane. No trace whatever of disease was found in this region. In the abdomen the only disease that could be discovered appeared to be in the right lobe of the liver beneath the right rectus muscle; the liver was markedly enlarged, reaching to three fingers' breadth below the costal margin; its surface was hard and presented large nodules; there was no ascites. Both Sir Isambard Owen and Mr. Dent considered that the enlargement was undoubtedly malignant; the liver did not in any way appear like a cirrhotic liver. There were no indications for treatment and the patient returned home on Feb. 9th. On April 25th Dr. Thornton wrote to say that the patient had died with every evidence of secondary malignant metastases but that the relatives could not be induced to consent to a post-mortem examination.

Remarks by Mr. DENT.—The remarkable feature of this case is that the patient survived for 21½ years and then died from disease which, though it remained latent for so long a period, was, I think, undoubtedly secondary to, and directly connected with, the original mischief The possibility of a new primary malignant growth cannot, in the unfortunate absence of a post mortem examination, be wholly denied but there was no evidence whatever of any such lesion Duplay in an extensive collection of cases mentioned one of survival for 16½ years Volkmann records one in which death occurred eight years after operation from deposits in the liver without local recurrence Many instances of death from secondary malignant disease at long periods after removal of the breast for carcinoma have been recorded I have seen one such case in which death took place about 27 years after removal of the breast and I well remember another patient whom I saw about every three months after removal of the breast for scirrhous carcinoma 11 years after operation she seemed absolutely well but 12 *months later she died* from secondary malignant disease involving the sigmoid flexure, the form of secondary mischief that so often carries *off these patients In the face of such cases it seems* unwarrantable to talk of the curability of carcinoma or to fix an arbitrary time limit and to argue that patients who pass that limit are "cured " In the case above recorded the site of the operation was perfectly free from disease as far as could be judged The perineal operation in this instance appeared to have answered quite as well as the more modern methods of Kraske and Bardenheuer and the control of the fæces was quite satisfactory

Reviews and Notices of Books.

A Textbook of Legal Medicine and Toxicology Edited by FREDERICK PETERSON, M D , President of the New York State Commission in Lunacy, Clinical Professor of Psychiatry, Columbia University, New York, and WALTER S HAINES, M D , Professor of Chemistry Pharmacy, and Toxicology in Rush Medical College Chicago, Professorial Lecturer on Toxicology in the University of Chicago In two volumes London, Philadelphia, and New York W B Saunders and Co 1904 Vol II Pp 825 Price 21*s*

IN our review of the first volume of this textbook in THE LANCET of April 23rd, 1904, p 1128, we explained the general scope and nature of the work and expressed our opinion that it promised to be one of the best treatises on medical jurisprudence in the English language The second volume in every way maintains the high standard of its predecessor and the editors may rest well satisfied with the results of their labours

The first article is occupied with a consideration of Malingering *and the Feigned Disorders, by Dr J T Eskridge* and Dr Leonard Freeman The difficulties which beset the practitioner when he is called upon to differentiate between functional and organic disease are frequently great, still more so is this the case when possible fraud has to be contended with In former times surgical diseases were more frequently feigned than they are at the present day but attempted simulation of various nervous affections is common either to excite sympathy or to obtain damages after receiving injuries more or less severe such injuries being alleged to have been caused by the negligence of certain individuals The investigation of such cases calls for the greatest *circumspection on the part of the medical adviser* Especial stress is laid by the authors on feigned mental disorders, and the employment of tables comparing the symptoms in the true with those of the feigned disease considerably aids in drawing attention to the main points upon which a differential diagnosis may be made

The next contribution is on the legal aspects of pregnancy and is written by Dr W A Newman Dorland, who is also responsible for the following communication which is headed "Legitimacy, the Determination of Sex, Signs of Delivery " He carefully discusses many matters which are frequently the subjects of legal inquiry The vexed question of the duration of pregnancy naturally receives full attention Many notable cases have come before the courts in which it was of the utmost importance to the parties concerned to ascertain the extent to which pregnancy in the human female may be prolonged Unfortunately there is no time that can be stated as the positive duration of pregnancy Although about 280 days is generally accepted as the average, cases have been recorded in which this period has been considerably prolonged One authority, von Winckel, maintains that in about 11 per cent of pregnant women the duration of pregnancy is over 300 days, prolongation occurring from 302 to 322 days In some countries the limit is laid down by law but in England no period is fixed and the whole matter has to be argued before the court in every case in which the question arises In Dr Dorland's communication much interesting information on this subject will be found, in addition to remarks on the determination of sex and on various medico legal points connected with delivery

The article on Criminal Abortion by Dr E P Davis contains a full account of the methods which have been adopted to empty the pregnant uterus for an improper purpose and the symptoms and complications which may arise are accurately described Dr Davis also writes on infanticide As is well known, this crime is alarmingly frequent Moreover, it is a crime which is very difficult to prove It rests with the prosecution to show that the infant had had an independent existence for unless this can be done the prisoner *cannot be found guilty of murder The difficulties that may* arise in attempting to show that the child was born alive in the strictly legal sense are well described by Dr Davis Unfortunately, there is a great want of unanimity amongst legal authorities as to what determines "live birth ' consequently in many cases the prisoner is found *"not guilty ' of murder but is convicted on the charge of* concealment of birth A definite pronouncement based on medical rather than on legal grounds is earnestly to be desired

The contributions on impotence and sterility, rape and unnatural offences are by Dr C G Chaddock and are well *up to the general standard of the work in clearness and* completeness The articles on venereal and genito urinary diseases in their medico legal relations on marriage and divorce *on malpractice on the medico legal relations of* the Rontgen or x rays, and on laws relating to the insane will all be found of interest, although the last-named will be of more value to American than to English readers

The portion of the work dealing with toxicology is very full and complete It commences with an article on the General Principles of Toxicology by Dr W S Haines, in which directions are given for the detection and separation of poisons Inorganic poisons are described by Dr J W Holland The chemical properties of the various minerals and their salts are first considered and then follow the symptoms produced by a poisonous dose, the treatment to be adopted, the post mortem appearances, and the methods employed for the detection of the "noxious substances The chemical tests are particularly well given The organic poisons for purposes of description are divided into "alkaloidal and "non alkaloidal " The alkaloids are defined as the 'main poisonous principles of plants" and their properties are discussed by Dr A B Prescott The non alkaloidal organic poisons are considered by Dr Reid Hunt and Dr Walter Jones Under this heading are included the various forms of alcohol, chloral hydrate, chloroform, the coal tar series, and also preparations of various plants, *such as digitalis, ergot, aloes, colocynth,* pennyroyal, and many others

Dr C A Doremus describes the gaseous poisons, and an account of food poisoning is given by Dr. C. Harrington. Dr. V. C. Vaughan contributes a few remarks on Ptomaines and other Bacterial Products in their Relation to Toxicology. It has been stated that the chemical tests and especially the colour reactions for certain vegetable alkaloids may be simulated so closely by the products of certain bacteria that it becomes difficult, if not impossible, to distinguish with certainty between them. If this statement be true the possibility of mistaking putrefactive substances for vegetable alkaloids should always be borne in mind in making medico-legal investigations. Dr. Vaughan proceeds to discuss these difficulties in a very able manner, laying stress on the tests for morphine, conine, strychnine, atropine, and others. He also makes some extremely interesting observations on the Post-mortem Imbibition of Poisons. Within recent years the question of the diffusion of poisons through the dead body has acquired importance largely on account of the fact that arsenic, corrosive sublimate, and other poisonous substances are used for the purpose of embalming bodies. Obviously a poison may be introduced into the body after death for the purpose of preserving it or with the intention of casting suspicion upon an innocent person, or to suggest suicide as the mode of death. The body being examined, the poison is found in various organs, and the question arises as to whether it obtained admission before or after death. Dr. Vaughan quotes several cases where this doubt arose and the medical evidence was therefore of the utmost importance.

Taking the textbook as a whole, we can thoroughly endorse the favourable view we formed after a perusal of the first volume. It forms a most valuable source of reference in all matters connected with medical jurisprudence and toxicology.

Lehrbuch der Kinderheilkunde. (Textbook of the Diseases of Children.) By Dr. BERNHARD BENDIX. Third revised and enlarged edition, with 12 illustrations. Berlin and Vienna: Urban and Schwarzenberg. 1903. Pp. 604. Price 12*s.* 6*d.*

THIS volume is the third edition of a work which was originally written by the author as a contribution to the series of handbooks on the subject of hygiene edited by Professor Uffelmann; with the death of the latter hygienist some ten years ago this series of handbooks came to an end, but Dr. Bernhard Bendix provided for the continuation of the work by bringing it out in the form of an independent textbook on the diseases of children. And it is in this form, though revised and enlarged, that we now have an opportunity of reviewing his work. The double revision to which it has been subjected since it constituted a part of the system of hygiene has deprived it of its original and special characteristics and has reduced it or, perhaps, to speak more accurately, has extended it to the conventional and familiar proportions assumed by modern textbooks which comprise the whole subject of the diseases of children.

We find no fault with the general arrangement and handling of the various subjects dealt with in this volume. We cannot help thinking, however, that more recent French, English, and American contributions to the literature of pediatrics have hardly received the acknowledgment to which their importance entitles them. For instance, in the account of the artificial methods of infant feeding, although the percentage method is described, Dr. Rotch's work is not mentioned; this is surely a considerable omission. Indeed, the whole section, which is devoted to questions of nutrition, is hardly up to the general level of excellence which characterises the greater portion of the volume. This is the more unexpected because Dr. Bendix is a well-known authority on the diseases of infants due to nutritional disturbances. Moreover, he has conducted some very interesting investigations on the subject of the essential pathology of athrepsia or simple atrophy, a disorder which represents one of the most pronounced types of malnutrition. In the section in which he described this little-understood disease he supplies a short *résumé* of his own investigations. According to his observations in a series of cases of primary atrophy examined by him it was found that from 72 to 85 per cent. of the normal quantity of nitrogenous elements was absorbed and utilised and as regards the fatty elements of food something like 50 per cent. of the normal quantity was assimilated. Deficient absorption of nitrogenous and fatty elements of food is not, according to the author's views, a sufficient explanation of the cause of athrepsia, and though in all cases there is clearly a deficient absorption, nevertheless the deficiency does not adequately explain the essential features of the disease. On the other hand, he believes that we may find an explanation of the condition in an abnormally rapid tissue combustion due to the absorption of poisonous products generated in the alimentary canal. Rapid tissue combustion combined with a somewhat deficient absorption might explain the progressive loss of weight in these cases. With regard to the rational treatment of cases of athrepsia the author insists that on the assumption that a normal infant should receive the equivalent of 120 calories per kilogramme of body-weight per diem, an atrophic infant should be supplied with only the equivalent of 100 calories and that conformably with its deficient powers of fat absorption this element of the food should be proportionately limited. Valuable as theoretical considerations and generalisations of this kind undoubtedly are, it is perhaps open to question whether in particular cases any advantage is gained by measuring an infant's food in heat equivalents; the personal "index of nutrition" or "co-efficiency of utilisation" is necessarily a very important factor in determining the physiological food requirements of any infant. These indices cannot be arrived at on theoretical considerations, they can only be estimated by personal observation. In other words, clinical experience and clinical acumen are absolutely necessary for conducting the management of these cases.

Although the practical value of Dr. Bendix's book may be detracted from by too strict an observance of theoretical considerations, nevertheless for teaching purposes it is perhaps no matter for regret that he lays so much stress on the accuracy of figures. As compared with other textbooks of the diseases of children written in the German language this new edition of Dr. Bendix's work is far more in accordance with our own ideas of what the arrangements and scope of such works ought to be. It is a book which is easy to read and very convenient for rapid reference.

Clinical Lectures on Mental Diseases. By T. S. CLOUSTON, M.D., F.R.C.P. Edin., Physician Superintendent of the Royal Edinburgh Asylum for the Insane; Lecturer on Mental Diseases in the University of Edinburgh. Sixth edition. London: J. and A. Churchill. 1904. Pp. 738. Price 14*s.* net.

SCIENTIFIC views regarding mental disease have recently been undergoing great changes in regard to the etiology and evolution of insanity, the clinical standpoint and the classification which should be adopted in accordance with the modern developments of knowledge, and the whole question of the relationship of insanity to mental and physical degeneracy and deterioration. Pathology is slowly adding her quota of discoveries to the obscure problem of the morbid processes which affect the brain and nervous system, while the rôle of toxæmic agents and micro-organisms in the production of mental disorder is being recognised and studied more and more. Dr. Clouston's clinical lectures are intended to give the student a clear, concise, and graphic description of the typical forms and varieties of mental disease. *Beginning with a description of cases of melancholia* the various other psychoses are duly described—often in considerable detail as regards history and symptoms. The amount of information contained in these lectures is large and the mode of presentation of the clinical data is simple and suitable to the understanding of the beginner in psychological medicine. The older types and method of classification are adhered to throughout; this is, perhaps, inevitable in the sixth edition of a textbook of clinical lectures which embodies and reflects the teaching of 25 years ago. Since then, however, great strides and advances have been made and although in the preface generous acknowledgment is given to the remarkable achievements of the psychiatric school of Kraepelin and others, which has so profoundly influenced modern psychiatry, the standpoint and the spirit of the book reflect the old and not the new psychiatry. While this applies to the clinical portion of the work the pathological sections must be reserved for separate consideration. The character of the book as regards pathological drawings and reproductions of microphotographs has been considerably advanced. The number of plates amount to 29, and of these 22 are devoted to micro-photographs and drawings illustrating various changes in the brain and its membranes and vessels in mental disease. While a few of these are of a fair average level of mediocrity some show a high degree of excellence in definition and detail of the morbid structures involved. For several of the best illustrations Dr. Clouston acknowledges his indebtedness to Dr. W. Ford Robertson, pathologist to the Scottish asylums.

Referring more particularly to the clinical part of the work the subject of Paranoia receives scant and sketchy treatment. This important affection is not presented with anything like adequacy even of outline, no clinical record of cases is given, and the reading of the account leaves us with but a hazy impression of what the author is trying to convey. Dementia præcox of the katatonic form, which has been so thoroughly investigated in the last decade by the German, French, and American school, is regarded as a "variety of stupor," a singular harking back to the old views of half a century ago. The scattered remarks and criticisms of the views of Kraepelin throughout these lectures show that Dr. Clouston has not, we think, grasped the full significance of that worker's remarkable discoveries in clinical psychiatry.

Dr. Clouston's lectures on the whole reflect the spirit, methods, and ways of clinical psychiatry of 25 years ago. An attempt to bring it thoroughly abreast of modern knowledge and to imbue it with the new spirit would involve re-writing or the production of a wholly new work. But his lectures retain their value for their pleasant and interesting style of teaching after the manner of the older school of psychiatry.

English Medicine in the Anglo-Saxon Times: being the FitzPatrick Lectures for 1903, delivered before the Royal College of Physicians of London on June 23rd and 25th, 1903. By JOSEPH FRANK PAYNE, M.D. Oxon. Oxford: The Clarendon Press. 1904. Pp. viii.—162. Price 8*s*. 6*d*. net.

DR. PAYNE is well known as one of the most learned of our medical antiquarians and he has chosen for the first of the FitzPatrick lectures a period of great interest to all the inhabitants of these islands although one of which the records are but scanty. "The drums and tramplings" which swept over these unhappy islands during the eighth and ninth centuries destroyed most of the books stored in the libraries of the time, and the existing medical MSS. of the Anglo-Saxon period number only about 20. Of these the most important is the Leech Book of Bald. Besides this Dr. Payne deals with the Anglo-Saxon translation of the Herbarium Apuleii Platonici and the treatise Peri Didaxeon, *a translation into Anglo-Saxon from a Latin work by a* writer of the school of Salerno. The only existing MS. of this work belongs to about the middle of the twelfth century. Dr. Payne further discusses Anglo-Saxon surgery together with sundry charms and considers that some of these may have survived to the present day. Some 35 years ago there was a shrew ash in Richmond Park growing almost opposite to the cottage in which Sir Richard Owen resided and a medical man, who was then a boy at school in East Sheen, tells us that he had been told by cottagers in the district that it "was a good thing for children to pass them through the split in the trunk." As the superstition of the shrew ash is not generally known it may be as well to state that the shrew was formerly supposed to be exceedingly venomous for its bite, whether in cattle or men, gave rise to painful suppurating swellings. Various remedies were extant for these swellings but the most potent was a shrew ash. This was an ash tree in which a hole had been bored. A live shrew was placed in the hole and the hole was then plugged. The virtues or venom of the shrew then passed into the tree and by a species of homœopathy the touch of the tree cured the injuries inflicted by the shrew. A later development, of course, assigned curative properties for disease other than that conected with the shrew, and as far as our informant remembers the ash mentioned above was used for the cure of whooping-cough, the trunk of the tree having been split and the children being passed through the cleft.

Dr. Payne's lectures may be confidently recommended to all those members of our profession who take an interest in the early history of their art, and the illustrations, which are reproductions of drawings by Miss E. A. Ibbs, give an additional charm to his work. The originals are to be found in various MSS. in the British Museum and are mostly from the Anglo-Saxon translation of the Herbarium of Apuleius.

LIBRARY TABLE.

Transactions of the Grant College Medical Society, Bombay from February, 1903, to March, 1904.—The report of a paper read by Dr. Raghavendra Row on the Serum Reaction of Bacillus Pestis in Plague, studied in the light of recent researches on immunity, makes interesting reading. He summarises as follows: 1. The lysogenic action of plague convalescent's blood on bacillus pestis is brought about by the combined action of two distinct bodies: (*a*) one of the nature of amboceptor (not destroyed by heat up to 56° C.); and (*b*) the other of the nature of complement (destroyed at 56° C.). 2. A serum from a plague convalescent loses its lysogenic action on bacillus pestis by age and exposure to light in a few days and in a few minutes by exposure to 56° C. (probably due to the destruction of complement). 3 This lost property is restored by a mixture of a fresh serum—e.g., from the rabbit (addition of complement). 4. Rabbits when suitably immunised to plague produce a serum rich in precipitins and containing a fair amount of bacteriolysin (to bacillus pestis). 5. By exposure to heat of 56° C. the bacteriolysin is rendered impotent (owing to destruction of complement); it is, however, to a certain extent restored by addition of fresh rabbit's blood serum (complement). 6. Roux's antipesteux serum is very rich in precipitin but not particularly bacteriolytic to bacillus pestis as such. 7. This loss of bacteriolytic property is probably due to age and is certainly produced by exposure to 56° C. (owing probably to loss of complement). 8. By addition of fresh rabbit's, man's, rat's, &c., fresh serum, however, the bacteriolytic property is restored (fresh complement). 9. Blood serum of patients dying from plague is deficient in amboceptor and its complement is not only poor but of the nature of an anti-complement. At the August and November meetings of the same society Dr. K. M. Dubash read papers on a case of Abdominal Section for Ruptured Uterus and on Some Causes of Sterility and Some Points in its Cure in Women. In the former paper he drew special attention to the administration of ergot by midwives, dwelling on the disadvantages and risks of its administration until after the expulsion not only of the child but also of the placenta.

Nos. 3, 4, and 5 of the first volume of the "Calcutta Practitioner."—In the *Calcutta Practitioner* (March 1904), Dr. Gopal Chandra Chatterji, assistant bacteriologist, Pathological Laboratory, Calcutta Medical College, has a paper entitled "Some Researches on the Malaria Parasite and its Intermediary Host—the Anopheles." They are arranged as follows: (*a*) description of the several varieties of malaria parasites (with short notes of some cases in which they were found); (*b*) special study of flagellation of malignant tertian parasite in view of the recent theories put forward by Major A. Buchanan, I.M.S.; and (*c*) description of the varieties of anopheles found in and about Calcutta with an attempt to find out the malaria-bearing ones. In the same number is a good notice of the life of the well-known native scientist, Dr. Mahendra Lal Sircar, the founder of the Science Association in Calcutta and an eminent member of the University of Calcutta. The April number contains some interesting notes on Hydnocarpus Oil in Diabetes, Rheumatism, Chronic Skin Diseases, and Leprosy, by Dr. Hem Chandra Sen, teacher of materia medica, Campbell Medical School, Calcutta. This oil is one of the oldest known remedies employed as a domestic medicine by the natives. The writer says there is no remedy superior to it in the treatment of leprosy. In this issue and in the May number Dr. Suresh Chandra Bhattacharya, first demonstrator of anatomy, Medical College, Calcutta, has good papers on Some Obscure Forms of Joint Diseases and Diseases in the Neighbourhood of Joints.

Analytical Records

FROM

THE LANCET LABORATORY.

DIGITALONE.

(MESSRS. PARKE, DAVIS, AND CO., 111, QUEEN VICTORIA-STREET, LONDON, E.C.)

DIGITALONE is a clear brown fluid containing all the active principles of digitalis. Its strength is equal to one-tenth that of the fluid extract of digitalis or four-fifths that of the tincture, the hypodermic dose being from eight to 15 minims. Digitalone is aseptic and non-alcoholic but its most important property is that it is non-irritating and therefore is specially adapted for hypodermic use, whereas ordinary preparations of digitalis are not suitable for this purpose on account of the presence of spirit and extractives. Digitalone is adjusted to a definite standard by physiological assay.

KOLJE.

(MR. J. GRANT GLASS, 123, GILMORE-PLACE, EDINBURGH.)

Kolje is described as a peptonised pure calves'-feet jelly, prepared with extract of kola nut and other ingredients. Our analytical examination confirmed this description, as we found peptones to be abundant, while a small quantity of the alkaloid caffeine was successfully extracted. Analysis gave the following results: water, 83·64 per cent.; and solid matters, 16·36 per cent., including 0·33 per cent. of mineral matter. About three-fourths of the total solid matter consisted of peptonised albuminoid. There were indications of boric acid. The solid portions of "Kolje" are doubtless nutritious as well as stimulating but the relatively large amount of water obviously reduces the nutrient value of the preparation, considered in its entirety.

ARDENNESE MILK AND CREAM.

(HEYMANN, FRÈRES AND CO., BRUSSELS. AGENCY: JOEST VAN HEEL AND CO., 3, DENMAN-STREET, LONDON BRIDGE, S.E.)

These milk products are manufactured at Lamarcheville, near Chimay, Belgium. They both gave satisfactory results on analysis which proved also that they were free from preservatives. Moreover, the sterilising process employed evidently interferes very little with the natural flavour. The milk gave the following results on analysis: total solids, 12·24 per cent.; fat, 4·14 per cent.; and mineral matter, 0·82 per cent. This is good rich milk. The cream gave the following results: water, 56·91 per cent.; and total solids, 43·09 per cent. The latter consisted of fat, 36·74 per cent.; curd, &c., 5·96 per cent.; and mineral matter, 0·39 per cent. The cream possessed a good flavour and, as is evident, shows on analysis excellent qualities.

NEW "TABLOIDS," "SOLOIDS," AND OTHER PREPARATIONS.

(MESSRS. BURROUGHS, WELLCOME, AND CO., SNOW-HILL BUILDINGS, LONDON, E.C.)

Amongst new additions to the list of tabloids which we have recently received are the tabloid glycerophosphates compound containing the combined glycerophosphates of calcium, sodium, potassium, magnesium, and iron, with pepsine, diastase, ignitia, and kola equivalent to half a fluid drachm of syrup of glycerophosphates; tabloid ophthalmic of zinc sulphate and cocaine hydrochloride for use as a painless astringent in ophthalmic practice; and tabloid of iron and strychnine phosphates, each containing one grain of phosphate of iron and $\frac{1}{12}$nd of a grain of phosphate of strychnine. A very useful new "soloid" is that containing the double salt of iodide of mercury and potassium. It is an excellent means of securing the effects of mercury biniodide in solution. The soloid dissolves readily in water, yielding a reddish fluorescent solution which is sufficient to indicate the presence of a poison. We have received also specimens of the following preparations: morphine phosphate, described as a soluble, stable, and trustworthy salt which is preferable to the acetate; guaiacol camphorate, an acid salt of guaiacol and camphoric acid, used with favourable results in phthisis (the salt passes through the stomach without change and without gastric disturbance but in the alkaline secretions of the intestine guaiacol is liberated under conditions obviously favourable for its absorption); calcium hypophosphite, a readily soluble salt in water; and, lastly, podophyllin, prepared strictly in accordance with the official method from a carefully selected drug. This is practically soluble in 90 per cent. of alcohol and yields only one-fourth the amount of ash laid down in the B.P. test.

SCOTCH WHISKIES.

(MESSRS. GREENLEES BROTHERS, GLASGOW, AND 29 TO 31, COMMERCIAL-STREET, LONDON, E.)

We believe these whiskies to be described correctly and evidence is not wanting that they are well matured. We have taken for analysis four types selected from a list containing ten different descriptions of whisky. Lorne Highland whisky gave the following results on analysis: alcohol, by weight 42·29 per cent., by volume 49·81 per cent., equal to proof spirit 87·29 per cent.; extractives, 0·30 per cent.; and mineral matter a trace. The secondary products were as follows, given in grammes per 100 litres of alcohol present: acidity reckoned as acetic acid, 31·20; aldehyde, 25·00; furfural, 1·50; ethers reckoned as ethyl acetate, 38·72; and higher alcohols, 240·00. The feature of this analysis is that the furfural is decidedly lower than in many all-malt whiskies and the same observation applies to the proportion of ethers. The G. B. Special Scotch whisky gave the following results on analysis: alcohol, by weight 39·30 per cent., by volume 46·59 per cent, equal to proof spirit 81 64 per cent, extractives, 0 13 per cent, and mineral matter, *nil* The secondary products were as follows, given in grammes per 100 litres of absolute alcohol present acidity reckoned as acetic acid, 60 00, aldehyde, 18 00, furfural, 3 55, ethers reckoned as ethyl acetate, 41 20, and higher alcohols, 160 00 This is an excellent, well matured all malt whisky Antique Pure Highland whisky gave the following results on analysis alcohol, by weight 41 80 per cent, by volume 49 29 per cent, equal to proof spirit 86 37 per cent, extractives, 0 19 per cent, and mineral matter, a trace The secondary products were as follows given in grammes per 100 litres of absolute alcohol present acidity reckoned as acetic acid, 46 00, aldehyde, 50 00, furfural, 3 00, ethers reckoned as ethyl acetate, 100 00, and higher alcohols, 160 00 The feature of this analysis is the high proportion of ethers and in this respect the spirit equals brandy The result is evidence in favour of the whisky being accurately described as "antique" Claymore whisky gave the following results on analysis alcohol, by weight 41 80 per cent, by volume 49 29 per cent, equal to proof spirit 86 37 per cent, extractives, 0 14 per cent, and mineral matter, *nil* The secondary products, given in grammes per 100 litres of absolute alcohol present, were as follows acidity reckoned as acetic acid, 31 20, aldehyde, 20 00, furfural, 1 80, ethers reckoned as ethyl acetate, 38 72, and higher alcohols, 140 00 These results do not coincide with those usually given by a spirit made exclusively from barley malt It is, however, a whisky with a "clean" and delicate flavour All these whiskies give evidence of being carefully prepared from good materials and they are pure in the sense that they are of good potable quality

BRAX BREAD AND FLOUR

(BRAX LIMITED NEEDHAM MARKET, SUFFOLK)

Brax bread is a malted bread and therefore much of the starch has been reduced to a soluble condition It contains further a very satisfactory proportion of proteids, amounting in the dry substance to 12 72 per cent The mineral matter amounted to 0 78 per cent Similarly Brax flour proved to contain 13 33 per cent and 0 65 per cent of proteid and mineral matter respectively The bread has an excellent flavour and it readily yields to the action of digestive ferments The microscope showed the practical absence of the irritating insoluble matters of wheat flour The bread keeps moist and in good condition for several days longer than does the ordinary white loaf

THE AIX LA CHAPELLE NATURAL PRODUCTS

(THE AIX LA CHAPELLE NATURAL SPRING PRODUCTS LIMITED AGENCY 24 AND 26 BASINGHALL STREET, LONDON E C)

The chief constituents of the Aix la Chapelle water are chloride of sodium and carbonate of sodium, whilst amongst the more important subsidiary constituents should be mentioned sulphide of sodium with traces of bromide and iodide of the same metal Our analysis of the Aix la Chapelle natural water practically confirms the analysis which is officially published in Germany We found the total saline contents to be 3 63 grammes per litre consisting in the dried residue of 2 86 grammes of common salt, 0 637 gramme of carbonate of soda, and 0 133 gramme of calcium carbonate We have also examined specimens of bath salt and drinking salt obtained by the evaporation of the natural water These are identical in composition with the salts contained in solution in the sample of water submitted to us The salts consist, that is to say, of about three fourths common salt and one fourth carbonate of soda It is suggested that by means of these salts equally beneficial results can be obtained by home treatment and therefore the journey to Aix la Chapelle can be dispensed with It may be pointed out, however, that much of the benefit derived by taking a course of waters is due to the rest, change, and regular living which such a régime involves Lastly, we have examined a specimen of soap containing a small proportion of the salts of Aix la Chapelle We fail to see what advantage is obtained by mixing soap with a little bicarbonate of soda and salt, especially as the sulphides present in the natural water do not exist as such in the soap or in the evaporated salt but as sulphates. Sulphides in soap might possibly have a beneficial action on the skin

PROVOST OAT BISCUIT

(GRAY DUNN AND CO KINNING PARK, GLASGOW)

The oat is regarded as the most nutritious of all cereals. According to our analysis this biscuit contains 14 17 per cent of proteid, which is about the maximum that oats give on analysis The mineral matter amounted to 2 62 per cent The biscuit is well made and possesses an excellent oaten flavour It may be observed also that the oat contains nearly 10 per cent of fat which, however, tends to become rancid This objectionable tendency is apparently checked in the provost oat biscuit, as the flavour of the oat in it is preserved fresh.

MILO FOOD

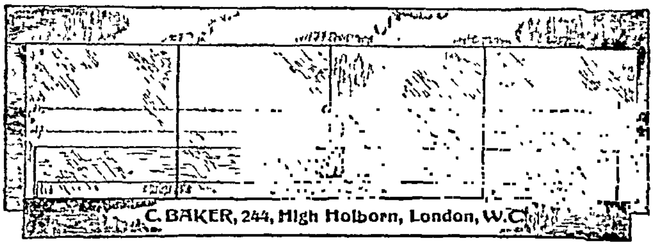
(HENRY NESTLE 48 CANNON STREET AND 49 QUEEN VICTORIA STREET E C)

According to our analysis this is a malted cereal food with a basis of milk Analysis shows a small proportion of unaltered starch, the carbohydrates consisting for the most part of malt sugar, milk sugar, cane sugar (added), and dextrin The extent to which milk enters into the composition of the food may be judged from the total amount of proteid and of fat present According to our analysis the former amounted to 14 08 per cent, in the latter to 7 00 per cent 67 per cent of the food proved to be soluble in cold water Mineral matter amounted to 1 20 per cent. The preparation presents all the elements necessary in infant diet and the constituents are together in desirable proportion except, perhaps that the percentage of fat might be increased with advantage and the carbohydrates spared in corresponding proportion The food is very palatable and very readily prepared

New Inventions.

ALL METAL COVER GLASS HOLDER

DUE to the use of wood in their composition, some cover glass holders offered for sale are liable to warp in hot climates, others are limited in their usefulness, being made to receive but one size cover glass, while in another the worker is prevented from placing his specimens in an oven owing to the employment of indiarubber in its construction In consequence of these drawbacks of other frames I have designed an *all metal* holder capable of receiving any size cover glasses between 15 and 26 millimetres, a sufficient range, probably, to meet the requirements of all workers *It has the following* advantages (1) it will receive glass covers of any size in general use, (2) being made entirely of metal it can be easily washed or sterilised, and (3) specimens requiring heat can be placed in an oven with the films in position without fear of ruining the holder Square or oblong cover glasses are recommended Having used a cover glass holder for some years I can endorse Major D G Marshall's remarks in THE LANCET of May 7th, 1904 p 1288, as to the general advantages of such an instrument when making blood films—viz, no time is wasted choosing and picking up cover glasses, [illegible] fingered When prepared [illegible] paper or dropped into a sn[illegible] the films by dust, &c, being thus avoided The following are the directions for use With the holder between the finger and thumb of the left hand the sliding bar is pulled with the right until the opening is a little wider than necessary The cover glasses are placed on the base plate, the sliding bar is brought into apposition with the covers, and the holder is prepared for taking a "spread." A small projecting pin at the end of the plate secures the covers from sliding off. The groove along the centre of the base-plate will enable the operator to remove the cover-glasses easily by means of forceps.



Messrs. C. Baker of 244, High Holborn, London, W.C., supply the holder.

Pakhoi, South China. Edward Horder, F.R.C.S. Edin.

ASYLUM REPORTS.

Royal Edinburgh Asylum (Annual Report for 1903).—The average number of patients resident during the year was 917, comprising 460 males and 457 females. The admissions during the year amounted to 411—viz., 196 males and 215 females. Of these 334 were first admissions. Dr. T. S. Clouston, the medical superintendent, states in his report that the number of admissions was large and it would have been much larger had it been possible to admit those who applied as private patients at the lower rates of board. Looking at the admissions generally "from a medical point of view there was an unusual number of aged and broken-down people—one patriarch was 98. There was a very large number of cases suffering from general paralysis ...... and the number of alcoholics was *excessive to a degree unprecedented in our history.*" The number of patients discharged as recovered during the year amounted to 145—viz., 67 males and 78 females, or 15·8 per cent. of the average number resident. The deaths during the year amounted to 119, or 13 per cent. as calculated on the same basis. Of the deaths four were due to cardiac disease, eight each to cerebral hæmorrhage and pneumonia, 16 to pulmonary and other forms of tuberculosis, 23 to senile decay, 38 to general paralysis of the insane, and the rest to other causes. Reviewing the history of the last three decades in the work of the Royal Edinburgh Asylum, Dr. Clouston states that in the year 1873 there were 583 pauper patients in the asylum chargeable to Edinburgh and Leith. This was a proportion of cases of lunacy of 1 to every 413 of the general population of this area. In 1883 the proportion of lunatics continued at 1 to 413. In the year 1893 there were 877 patients drawn from the same area, or 1 to 379 of the population, and in 1903 the number of patients was 1248, or 1 to every 315 of the population. For the whole of Scotland the proportion of the lunacy population to the general population was 1 to 371 in 1893 and 1 to 320 in 1903. The increase of lunacy during the last three decades is partly, says Dr. Clouston, due to an increase of certain forms of mental disease, such as general paralysis and alcoholic insanity, and to the increasing facility with which the public avail themselves at the present day of asylum care and treatment. In the five years 1873 to 1877 the percentage of alcoholic cases in the asylum was 18·5 for males and 10·4 per cent. for females; it has steadily gone up and now it has doubled. No explanation will account for this, says Dr. Clouston, but the one that certain classes of our population are drinking to greater excess than they did, and in doing so are, many of them, destroying their sanity. ...... This is also confirmed by the increased drink bill of the empire and the increasing police arrests for the smaller offences connected with drunkenness." The Commissioners in Lunacy report very favourably on the administration of the asylum and on the care and attention bestowed on the inmates.

West Sussex County Asylum, Chichester (Annual Report for 1903).—The average number of patients resident during *the year was 695, comprising 306 males and 389 females.* The admissions during the year amounted to 151—viz., 75 males and 76 females. Of these, 123 were first admissions. Mr. H. A. Kidd, the medical superintendent, states in his report that a number of applications for the admission of private patients have had to be declined owing to the lack of special accommodation. The admissions during the year were of a distinctly unfavourable character, only one-fifth of the whole number being deemed recoverable. Four males and five females were actively suicidal on admission. Hereditary predisposition to insanity was ascertained to exist in 42 per cent. of the cases and was present in half the cases in which any history at all was obtainable. One-fourth of the admissions had had previous attacks of insanity. These two causes, says Mr. Kidd, "constitute the predisposing factors of attack. The precipitating factors include the so-called moral causes, assigned in 20 cases, and the physical causes, of which the principal are alcoholic excess (24 cases), senile decay (15 cases), and epilepsy (11 cases)." Congenital mental deficiency was present in 13 admissions. The number of patients discharged as recovered during the year amounted to 47—viz., 24 males and 23 females, or 6·8 per cent. of the average number resident. The deaths during the year amounted to *59, or 8·5 per cent. as calculated on the same basis.* Of the deaths one was due to senile decay, two each were due to epilepsy and cerebral hæmorrhage, five each to cancer and general paralysis, six to cardiac disease, ten to pulmonary and other forms of tuberculosis, 22 to organic disease of the brain, and the rest to other causes. Necropsies were made in all cases of death but three. Two inquests were held during the year—the first, on June 5th, upon a senile dement who sustained an accidental fracture of the ribs and died from subsequent pneumonia, and the second, on Oct. 22nd, upon a suicidal patient, a man who was admitted with a seriously cut throat, from the effects of which he died eight days afterwards. With the exception of a severe epidemic of influenza during the early months of the year the general health of the patients and staff had been good. The epidemic of influenza affected 100 patients and though not so extensive as last year (when the number of patients affected was about 200) it was of a serious nature and caused two deaths. "The epidemic was at first of the gastro-intestinal type, and having regard to this and to its origin amongst the farm staff it was considered necessary to sterilise all the milk-supply. This had a good effect, for the epidemic abated and the type of subsequent cases was of the ordinary myalgic character." The Commissioners in Lunacy state in their report that the asylum was found to be maintained throughout in the best of order, that the day-rooms were bright and comfortable in appearance and plentifully supplied with flowers and objects of interest, that the condition of the dormitories and bedding was quite satisfactory, and that the patients were neat, tidy, and well behaved. The committee of management states in its report that improvements are being carried out in the laundry department and that increased provision for dealing with outbreaks of fire has been made. Additional means of exit in case of fire have also been provided for the nurses' block.

North Devon Infirmary, Barnstaple.—The annual meeting of the governors of this institution was held on August 16th. The medical report stated that 840 in-patients were admitted during 1903, against 668 in 1902, while the out-patients numbered 3032 against 2541 in the previous year. The financial statement showed that the expenditure had exceeded the income by £525, £1057 had been received from legacies, and the Hospital Sunday collections amounted to £370, being slightly less than in the preceding year.

Vaccination Statistics.—At the meeting of the Bristol board of guardians held on August 13th it was reported that 4575 births were registered from July to December, 1903, and that of these children 2890 were successfully vaccinated, 106 had exemption certificates, and 16 were insusceptible to vaccination.—At the meeting of the Axbridge (Somerset) board of guardians held on August 16th it was stated that 490 births were registered in the districts of the union during the half-year ended December, 1903, and that of these children 289 were successfully vaccinated, *98 had exemption certificates,* and one was insusceptible to vaccination.

THE
BRITISH MEDICAL ASSOCIATION.
MEETING AT OXFORD

THE SECTIONS.
PSYCHOLOGICAL MEDICINE
FRIDAY JULY 29TH

Mr CONOLLY NORMAN (Richmond District Asylum, Dublin) read a paper on

Dementia Præcox, or the Premature Dementia of Adolescents

The existence, he said, of a single large and distinctive group of mental diseases which comprised three such varying and different mental disorders as those known under the names of hebephrenia, katatonia, and paranoid dementia præcox could be only admitted under conditions that satisfied modern tests as to what constituted disease The only connecting links added Mr Norman, which existed among these three affections named were their origin and occurrence at the age of puberty and adolescence (between the fifteenth and the twenty fifth years of life) and their decided tendency to early termination in dementia With *regard, however, to their origin at the epoch of puberty* and adolescence the peculiarities exhibited by these three insanities were largely explicable as exaggerations and morbid perversions of psychological characteristics and tendencies proper to this epoch of life, modified or distorted by disease As regards the alleged early and strong tendency to dementia in these cases the statement was, said Mr Norman, open to correction, since a considerable minority of cases of so called dementia præcox recovered Moreover, no definite or distinct organic degenerative changes, he continued, had been demonstrated post mortem in cases of dementia præcox, the changes described by a few authors (to whom he referred) being of a casual nature and even hypothetical No thorough investigation, based on modern methods of histological technique, had been made on the pathology of dementia præcox and until such evidence was forthcoming it was well to hold their judgment in suspension and to cease from applying to it the term dementia It was, however, he urged, true that adolescent cases of insanity not recovering had a special liability to run into a peculiar form of dementia In cases of dementia præcox there was an incoordination or "ataxy" of the mind, not a paresis or paralysis such as occurred in the case of general paralysis and which alone deserved the name of true dementia The dementia of adolescent insanity supervened at the termination of an attack or attacks of mental disorder of very *varying character, marked by phases and mixed conditions* of excitement, shallow depression, cataleptiform attitudes and poses, stuporous attacks with negativism and resistiveness to everything required to be done by the patient, and other symptoms indicating the occurrence of hallucinatory mental confusion Therefore, he said, dementia was a faulty term to apply to cases of this class Moreover, to call anything precocious because it occurred in early life "was a perversion of terms, for precocious implied too early arrival at an inevitable end Moreover, the curability of a small percentage of cases of dementia præcox forbade them to use the term dementia—a name which encouraged despair The term insanity of adolescence was free from such objection, it committed them to no views of its prognosis and was therefore the more suitable word to use In saying this he did not wish to disparage the splendid work done by various psychiatrists of France, Germany, and America but he could not (while admitting their facts and descriptions) accept everything in their terminology

Dr W R DAWSON (Dublin) considered it undesirable to group the diseases in question under the term dementia præcox since hebephrenia was often a curable affection, and in view of the age of some cases the term præcox could not be applied as the equivalent of "youthful" He thought that a simple classification solely for teaching purposes was the only admissible one—a classification like that of the time honoured scheme which divided mental diseases into mania, melancholia,
dementia. The absenc
logy of dementia præco.

or refusing at present to accept, its claims as a nosological entity

Dr ERNEST W WHITE (City of London Asylum, Dartford) preferred the term "premature dementia" as a title for the mental decadence occurring between the limits of puberty and adolescence During the last few years their terminology had been so saturated by the fertile brains of the continent that there was a plethora of titles He had seen many cases of premature dementia, both of the so called paranoic and hebephrenic varieties, during the past ten years among the better educated and highly strung patients of the "private" class, whereas among the pauper or rate paid class of patients this affection was less common and in asylums which drew their inmates from agricultural districts such cases were rarer still

Dr W KONIG (Berlin) stated that his clinical experience was in harmony with that of Dr White There was undoubtedly a distinct class of cases which could be conveniently termed dementia præcox Some of these were congenitally weak minded, a greater percentage, however, exhibited a normal ng the
prognosis he never ver before
one or two years of he had
never seen a case permanently recover

Dr DAVID BOWER (Bedford) expressed general agreement with the views of the previous speakers He regretted that nothing had as yet been discovered to make the diagnosis of the disease certain until incurability set in from lapse of time

Dr G E SHUTTLEWORTH (Richmond) said that dementia præcox was very rare in the class of patients—feeble minded children under the London County Council—with which he had to deal, he had met only a single case which exhibited the classical symptoms of hebephrenia and who was a member of a highly neurotic family He agreed with what was laid down by the late Dr Langdon Down, that such cases exhibited an innate tendency to mental defect and deterioration at the developmental or adolescent period of life

Dr W LLOYD ANDRIEZEN (London) said that on the whole he supported the use of the term dementia præcox, understanding by it the premature dementia which occurred in pubescence and adolescence, which was typical of that epoch of life and which had a definite basis of dementia on which were variously superposed disturbances of the nature of mental confusion and hallucinations While having remote affinities with recurrent mania and still more remote affinities with paranoia it was conducive to clearness of ideas and, indeed, consonant with facts of clinical and general psychiatry to keep the class of dementia præcox by itself Although externally rather ill-defined (and what group of insanity had not "straggling" cases resembling neighbouring groups?) the cases of dementia præcox aggregated well and distinctively under five "centres of condensation, so to speak, he thus recognised a simple, a hebephrenic a katatonic, a paranoid and a criminal form of dementia præcox, but he would not refer in detail to these as he had made that the subject of a paper published by himself about a year ago

Dr T SEYMOUR TUKE (London) said that he could not accept the term dementia præcox though he accepted the group of diseases which it connoted He preferred the term adolescent insanity

Dr E S PASMORE (Croydon Asylum) accepted the use of the term dementia præcox as concise and convenient, and said that although in a sense it was used to hide their ignorance no better term was before them He had often found on inquiry into the history of cases that they had suffered earlier in life from "fits" and obscure attacks of nervous excitement or breakdown, and hoped that in time they would discover the physical basis of this disease

A paper was then read by Dr PASMORE on

How to Take a Family History

The paper pointed out the kind of details and data to be collected so that the physician could tabulate in the form of a diagram a record of the mental state of the ancestors, descendants, and collaterals of the patient At present, he said, there was not in our public asylums any regular system or rule by which an accurate and trustworthy family history could be taken The diagrams which he had drawn up for his own studies and which he passed round showed clearly how this could be done The family history for three generations could thus be given in the diagram, but, said

Dr. Pasmore, it was useless to enlarge the scope of this aspect of the diagram since history of a trustworthy character could not be obtained beyond three generations.

Dr. A. T. SCHOFIELD (London) read a paper on

The Cure of Quackery.

The quack, he said, flourished in every land where he was safe from the law so long as he did not infringe the technical part—the "letter," so to speak—of the law. The gullibility of human beings and the hope which sprang "eternal in the human breast" were two chords on which the quack played. Quacks cultivated methods and means of treatment which made a deep impression on ignorant persons; they cultivated and exercised also their powers of mental "suggestion" on patients. He thought that physicians should themselves pay greater attention to the mental factor in disease and, above all, to the operations, obscure, it was true, but nevertheless potent, of the "unconscious mind" in helping the cure of disease.

A few brief remarks from Dr. F. W. EDRIDGE-GREEN (London), Mr. JAMES STEWART (Bristol), and Mr. G. STEVENS POPE (Middlesbrough) followed the paper, after which the proceedings were brought to a close.

LARYNGOLOGY AND OTOLOGY.

THURSDAY, JULY 28TH.

A discussion on

The Etiology, Treatment, and Prognosis of Innocent Growths of the Larynx

was opened by Dr. J. DUNDAS GRANT (London) and Professor A. ROSENBERG (Berlin).

Dr. DUNDAS GRANT in opening the subject limited himself to non-malignant growths found in the interior of the larynx. Many growths in the larynx, he said, were so closely related to inflammatory products that they could not be distinguished from them and, indeed, were identical with them in their anatomical structure. Their diversity depended mainly upon which elements in the composite structure of the laryngeal mucous membrane were chiefly affected. Amongst the commonest growths in the larynx were found papillomata (pachydermia verrucosa) essentially identical with the pachydermia found in its most typical forms on the vocal processes and in the interarytenoid space. Such growths as fibromata, fibro-papillomata, fibro-adenomata, cysts, and angeiomata were also explicable as the result of inflammatory conditions. Those parts of the vocal cord which underwent the greatest amount of mutual concussion and attrition, such as the junction of the anterior and middle thirds (the most frequent nodal point during phonation), the vocal processes, and the interarytenoid space, would seem to be most liable to chronic inflammatory and neoplastic changes. In the interarytenoid space the result was a diffuse thickening (pachydermia) at the vocal process (the typical pachydermic nodule). At the junction of the anterior and middle thirds of the cords there might be a "singer's nodule" consisting of a simple epithelial thickening (a miniature corn), a smaller or larger papilloma generally of soft consistence, or a sessile or pendulous œdematous fibroma which might exceptionally contain glandular structure. The chief causes of irritation of the larynx were over-use, or wrong use, of the voice and irritating vapours or dusty atmosphere; excess in tobacco smoke (especially inhalation of cigarette smoke) might also be quoted. Nasal obstruction leading to mouth breathing or purulent nasal discharges inhaled into the larynx were among the most potent contributories. Speaking of the prognosis of innocent laryngeal growths, Dr. Grant said that was dependent mainly upon their accessibility for removal and the possibility of avoidance of the predisposing and exciting causes. If not removed their tendency was to increase of growth, leading to fatal obstruction to respiration. Spontaneous disappearance was possible in the case of papillomata but could not be counted upon. After operation recurrence was possible unless the removal was complete. Dr. Grant's experience led him to the view that single pedunculated growths at the anterior commissure were unlikely to recur, whereas sessile ones at the junction of the anterior and middle thirds of the vocal cord were very likely to do so, as also were multiple papillomata. The question of malignant transformation of benign growths, he said, could not be left unconsidered. Practically it only arose in connexion with papillomata which, in exposed parts of the body, had a tendency under repeated or continued irritation to develop into epitheliomata. There was no reason for immunity on the part of the larynx, but the result of Semon's collective investigation seemed convincing as to its extreme rarity. Speaking of the treatment Dr. Grant said that this was not necessarily always operative. The avoidance of exciting and predisposing causes—for example, complete silence or limitation of the voice to a whisper for several months—was sometimes sufficient in cases of very small nodules due to over-use or misuse of the voice. In other growths removal was the only treatment and it should be carried out *per vias naturales*. The form of instrument employed varied with the special experience of the operator. For the destruction of the stump various caustics had been employed, such as nitrate of silver, formalin, chromic acid, tri-chloracetic or salicylic acid; the last-named was, in Dr. Grant's opinion, particularly valuable for papillomata. Recent experience had impressed him very favourably with the value and practicability of the fine galvano-cautery point. The distance from the dorsum of the tongue to the vocal cord was sometimes very considerable and beyond the reach of ordinary laryngeal forceps—fully four inches. In such a case he had eradicated a papilloma of the size of a split pea by a few touches of the fine galvano-cautery point. In considering the question whether any circumstances would call for removal of non-malignant intralaryngeal growths by external operation, Dr. Grant said that certainly the cases in which it was justifiable were extremely few with growths on the inner aspect of the framework of the larynx. When, however, all endolaryngeal methods in the most skilled hand available had failed or the size or vascularity of the tumour made intralaryngeal measures impracticable external methods were called for. Tracheotomy might be practised in children with papillomata who might not be amenable to endolaryngeal treatment, more especially if breathing were obstructed, in the hope that spontaneous disappearance of the growth might take place. Tracheotomy was also useful for the removal of a growth so low in the larynx as to be beyond the reach of intralaryngeal instruments.

Professor ROSENBERG in his introductory paper briefly referred to the rare cases in which before the invention of the laryngoscope laryngeal tumours had been removed through the mouth, also to the instances in which a polypus had been spontaneously expelled by coughing, and to the occasional spontaneous disappearance of papillomata following an exanthematous disease. On the other hand, he had never observed spontaneous cure of a laryngeal growth, as had Lennox Browne and others, after the removal of a nasal obstruction. He had noticed no special benefit from inhalations, insufflations, and injections. At the same time in inflammatory nodules, as also in cases of the so-called singers' nodules, he considered that something might be said for astringent treatment, but it remained an open question how far recovery was due to the simultaneous sparing of the voice. On the whole, however, the only right treatment for endolaryngeal tumours, he said, was operation and all laryngologists were agreed that with benign tumours the endolaryngeal method must in the first place, and almost always, be adopted. When dyspnœa threatened, or there was good reason to fear that the endolaryngeal interference would produce so much swelling of the mucous membrane as to cause serious dyspnœa, or when an operation *per vias naturales* might not have the desired result an external operation at the very outset was necessary. If tracheotomy were not imperatively required treatment should always be carried out by the natural passages. The introduction of cocaine into laryngology was a great advance, because by the use of this anæsthetic it was possible to remove a laryngeal tumour without much inconvenience to the patient. On the other hand, against this advantage there was the drawback that the vocal cord to which the polypus was attached became lax and did not become tightened by reflex stimulation and so might be torn away to a certain extent, with the new growth by the less experienced hand. General anæsthesia in adults was only necessary in the very exceptional cases of extreme reflex irritability or nervousness. In children general anæsthesia was often necessary. In the course of more than 20 years' practice he had only once been obliged to use general anæsthesia in an adult. The anæsthesia should not be deep, otherwise the patient, who was in the sitting posture, became limp and would not be maintained in a suitable position and, further, the copious secretion of saliva covered the mirror and if a severe hæmorrhage occurred the blood would be inspired. It was necessary also to cocainise the larynx, as in the slighter degree of anæsthesia the reflexes were not completely abolished. Professor Rosenberg referred to the special difficulty in treating papilloma in children owing to their refusal to permit the use of the laryngoscope, and in referring to intubation he pointed out the possible risk of dissemination of the growth. With regard to endolaryngeal instruments he expressed a preference for the cutting curette and exhibited one which he had had constructed. It was made on the Landgraf principle but its blade had a straight shank, so that when it was applied to the edge of the vocal cord all that was above it could be removed with one cut cleanly and evenly. With this instrument he had removed entire singer's nodules and broad flat tumours projecting only a little beyond the edge of the vocal cord on which forceps slipped easily. Professor Rosenberg mentioned the use of snares for the removal of papillomata. They were especially useful when a large tumour with a relatively thin pedicle had to be removed. With a view of combining the character of the snare with the usefulness of a cutting instrument he had designed a laryngeal snare on the principle of Jaenicke's snare. It was possible with this snare after it was drawn together, by *simply pushing forward the slide to push the snare* out again to catch the tumour in it and to cut it off clean. The snare receded into a *sharp edged slip* in the front part of the snare shaft in such way that the tumour was retained within the snare. He then briefly discussed the treatment of amyloid, lipomatous myxomatous, and adenomatous growths of tumours of thyroid origin and of angeiomata. He considered that the treatment of cavernous angeioma of the larynx *per vias naturales* should not be attempted. He had observed one such broad based tumour which bled freely when touched gently so that he gave up the idea of treating it even with the galvano cautery.

In the general discussion which followed

Dr ADOLPH BRONNER (Bradford) inquired whether formalin had been found successful in the treatment of papillomata.

Dr N C HARING (Manchester) referred to laryngeal growths secondary to, or associated with nasal lesions. The combination of adrenalin with cocaine he had found useful as a local anæsthetic in the removal of growths from the cords.

Dr GREVILLE MACDONALD (London) had not observed spontaneous disappearance of papillomata, recurrence had followed the subsidence of small growths. He had been struck with the rapidity of recurrence during the removal of papillomata the rate of growth appearing to be in excess of that prior to commencing their removal. Operative treatment he considered should be placed before the use of caustics. Thyrotomy had the disadvantage of a tendency to *be followed by impairment of the voice whereas no harm re*sulted from the use of forceps. He was opposed to any external operation for the removal of papillomata in children. The use of snares was attended with the risk of the growth dropping in the trachea.

Dr P WATSON WILLIAMS (Bristol) regarded "singers nodules as inflammatory in origin, and rest of the voice *per se* as the most potent remedy.

Dr STCLAIR THOMSON (London) was opposed to the use of snares and in favour of MacKenzie's forceps for the removal of growths.

Dr PRICE BROWN (Toronto) had found adenoids to be present in all children with papillomata in the larynx. He regarded climate as a determining factor, the papillomata subsiding in a dry climate.

Dr B H SCANES SPICER (London) Dr HERBERT TILLEY *(London)* Mr E B WAGGETT *(London)* and Mr H B ROBINSON (London) also took part in the discussion.

The PRESIDENT (Mr CHARTERS J SYMONDS London) summed up the discussion and observed that all were agreed upon the usefulness of endolaryngeal operations.

Dr DUNDAS GRANT replied.

Dr ALBERT A GRAY (Glasgow) gave a

Demonstration of Macroscopic and Microscopic Preparations of the Human Membranous Labyrinth prepared by a New Method.

The microscopic *preparations* included *sections of the human* cochlea and of that of the guinea pig, the mole, and the white mouse.

Dr BRONNER read a paper on

The Treatment of Non suppurative Catarrh of the Middle Ear by the Local Application of Remedies with Nebuliser and Compressed Air Apparatus.

Dr Bronner considered that the use of Politzer's bag was often harmful and that the proper way to use the catheter was not to blow into it with a Politzer's bag but to use Lucae's double bag. With this a continuous current of air could be kept up and the pressure regulated, better still was the large compressed air apparatus as used in America. By this method the immediate result obtained was not only greater *than after the use of Politzer's bag but more* permanent and the diseased mucous membrane of the Eustachian tube was treated at the same time.

Dr THOMAS BARR (Glasgow) was in favour of Politzerisation when done efficiently as seen by inspection. Auscultation was not quite trustworthy as a test.

Dr L HEMINGTON PEGLER (London) considered that Dr Bronner's apparatus replaced the bougie.

Dr SCANES SPICER inquired whether it was correct that the drum had been ruptured with this compressed air apparatus.

Dr DONNELLAN (Philadelphia) and Mr GEORGE JACKSON (Plymouth) also took part in the discussion.

Dr WILLIAM MILLIGAN (Manchester) read a paper upon

Meniere's Disease and its Operative Treatment.

Mr L A LAWRENCE (London) gave

Notes on a Case of Mastoid Abscess Five Weeks after Measles, Operation Immediate Recovery.

The case was brought forward on account of the following interesting points. The abscess developed in a girl aged five years in little more than a fortnight. As far as it was possible to ascertain no previous disease of the ear had existed. There was never any complaint of pain, notwithstanding that this was the first time the child had had suppurative middle ear disease. There was no pain complained of on palpation over the mastoid. There was only *very slight raising of the temperature. No granulations* were present in the ear and careful examination in the cavity of the mastoid did not reveal any. The treatment adopted was Wilde's own method it was not proposed with any other idea than that of letting out pus, certainly not with any belief that the cure which followed would have resulted from such a simple proceeding, the case being well within a fortnight.

Dr W S SYME (Glasgow) communicated

A Case of Congenital Word Deafness.

The patient was a boy aged nine years fully grown, healthy, and cheerful. The history was that he had never spoken and that he did not appear to understand when he was spoken to and yet he was not deaf because he heard music and was frequently observed to hum tunes which he had heard played and to hear at once when, for instance, a street organ was in the neighbourhood. Except for the defect referred to there was nothing to suggest lack of average intelligence. On examination the tonsils were found to be enlarged and a mass of adenoids was felt in the nasal cavity. The tympanic membranes were retracted. There were no other signs of previous ear disease nor was there anything in his personal history or in that of his family to suggest intracranial disease. After removal of the tonsils and adenoids his hearing power was not appreciably altered. It was impossible to obtain trustworthy results by examination with a watch or tuning fork. When made to watch the lips of the person speaking he attempted to repeat the sound of the words. If his eyes were covered he still attempted to repeat what was said to him getting usually the number of the syllables but not the words themselves.

FRIDAY JULY 29TH

Dr GREVILLE MACDONALD and Dr SAMUEL WEST (London) opened a discussion on

Intranasal Disease as a Determining Factor in the Production of Laryngeal and Pulmonary Affections.

Dr MACDONALD after referring to the unsatisfactory condition of a subject where the conflict of clinical facts the contradictory opinions deduced by authorities, and the small help afforded by the physiologists precluded the *possibility* of establishing a scientific basis for future investigation, offered a working generalisation which might be a step towards the establishment of a definite law.

The speaker dealt with his own observations and divided his cases into three classes: (1) those pointing to the cure or relief of asthma by removing obstruction to easy breathing, or obstruction causing pressure; (2) those where the treatment of any other sort of abnormality in the nose was similarly successful; and (3) those where the mere cauterisation of the mucous membrane in a healthy nose resulted in relief or cure. These three classes were then discussed *seriatim*. In the first, the most favourable forms of obstruction were, first, anterior hypertrophy of the inferior turbinals; second, septal spurs and deviations; third, adenoids; and lastly, polypus. In the second class were found general œdema of the mucous membrane, especially when associated with excessive sneezing, frequently also with chronic bronchitic asthma. Not infrequently the cure of these cases was effected by the electric cautery. Atrophic rhinitis might also be responsible for asthma and the amelioration of the nasal condition might result in cure of the bronchial symptoms. In the third class were placed the cases in which frequent relief and even cure of asthma resulted from the mere cauterisation of the mucous membrane covering the upper part of the triangular cartilage in perfectly healthy noses. So far the clinical facts of the association of the nose with asthma were obvious enough. But they were further emphasised by the observation that occasionally the removal of polypus sometimes originated for the first time the onset of asthma. Passing to his generalisation, Dr. MacDonald invited attention to three points of collateral evidence (1) that whenever a patient complained of frequent and severe cold-taking and any abnormalities whatever were found in the nose, they could almost promise to cure the cold-taking by curing the nasal abnormality; (2) that whenever a patient complained of paroxysmal sneezing, whether of daily attack or of longerinterval, they were tolerably sure of curing him by correcting the nasal disease or malformation; and (3) that a patient with polypus, less often with other form of obstruction, sometimes took cold, often severely, in the form of rhinitis, laryngitis, or bronchitis, after the removal of the obstruction. Probably the sudden exposure of a protected mucous membrane to cold air accounted for each of these accidents as well as the asthma. Remembering these three points, which would be conceded by many observers, Dr. MacDonald said that this generalisation might be formulated. Any treatment that allayed the irritability of the membrane—whether by operation and the ventilating of abnormally protected areas of mucous membrane, or by hardening the hyperæsthetic areas with the electric cautery, or by the exhibition of such local remedies as cocaine, —might modify or arrest the onset of catarrhal attacks, whether they manifested themselves in symptoms of sneezing, laryngitis, bronchitis, or asthma.

Dr. WEST, in introducing the subject, said the affections of the nose which were associated with respiratory difficulties fell into three groups: (1) *obstructive*, where there was mechanical interference with the free passage of air through the nose; (2) *infective*, where inflammatory or infective processes were set up in the respiratory organs by infection from the nose; and (3) *irritative*, where the respiratory condition was of reflex origin excited by irritation within the nose. Speaking of the obstructive group he said that mechanical obstruction in the nasal passages did not of itself cause any respiratory affection unless it were associated, as occasionally happened in children, with adenoids and enlarged tonsils, then deformities might be produced in the thorax such as pigeon breast or Harrison's furrow. What nasal obstruction must of necessity cause was mouth breathing; the air was then not warmed and filtered as it would be in the nasal passages, so that the mouth and pharynx became dry and irritable and chronic pharyngitis was almost the inevitable result. Besides this the parts were prepared for infection. Regarding the infective group, when the mouth and pharynx were moist and when the mouth and tongue were continually washed with saliva, the germs which gained access in the air inspired were got rid of, or at any rate were not likely to grow. But when the breathing was through the mouth the coating which formed upon the tongue, though chiefly made up of dried secretion and cells, teemed with germs of all kinds. If among these there were pathogenic organisms —e.g., the pneumococcus—very serious infection of the air passages and lungs might follow. Thus mouth breathing greatly increased the risk of infection of the air passages. If this danger were more often thought of in the specific fevers, especially of childhood, the frequency of pneumonia and bronchitis, he believed, would be greatly reduced. When there was actually any infective condition in the nose infection, he said, was very likely to spread directly to the neighbouring parts. Nasal diphtheria presented the most obvious and striking example. But so gross an infection as diphtheria was not required to illustrate this fact. Nothing was more common than for simple catarrh to commence in the nose and extend to the pharynx and even to the respiratory organs. Such was the history commonly given by patients of their chest colds. They described the sequence of events graphically and said that their colds always began the same way, starting in the nose, and then spreading to the chest. What was more, these catarrhs might be stopped by antiseptic washes to the mouth and pharynx so that the line of extension was cut, or better still, of course, by the removal of the source of infection from the nasal cavity. Passing to the irritative or reflex group Dr. West said it was by far the most interesting in relation to the respiratory neuroses. Cough, often paroxysmal in character, was common with affections of the nose as it was with those of the throat. Another affection which naturally suggested itself was paroxysmal sneezing. Besides these there were various subjective sensations to which nasal affections gave rise—e.g., sensations of tightness in the chest or shortness of breath or even dyspnœa. All these conditions might stand in some relation to asthma but they were not of themselves asthma, or even necessarily asthmatic phenomena, as they had been called. Of the relation in which asthma stood to intranasal disease much, he said, had been written of late years. Opinions varied widely as well as figures. It was a matter of surprise to those who knew that true asthma was not a common disease that authors should speak of having seen 300, 400, or 500 cases of asthma in a few years. One wondered where they got them from. There were over 5,000,000 of people in London and yet he doubted if there could be got together at the present time from all sides 500 separate cases of spasmodic or true asthma. The term "asthma" must be used then, he said, by these writers in a very wide and comprehensive sense and the numbers could only be made up by including not only all the asthmatic phenomena above referred to but many other phenomena of still more doubtful nature. Accepting, however, for the purpose of discussion the figures given, they might consider, he said, how far they proved the frequency of the association. The problem might be attacked in two ways. 1. A number of cases of asthma might be taken and the frequency of nasal disease among them be determined. Thus Lublinski found in 500 cases 143 with some pathological condition in the nose, that was in 28 per cent.; of the 143, 27 were cured (20 per cent.) and 13 relieved (10 per cent.), or 30 per cent. in all. Francis in 402 cases found nasal disease in 56, that was in 13·9 per cent., and very few of them were relieved by treatment. To make such statistics of real value it was necessary to know the frequency with which these nasal conditions occurred among healthy people, for it was obvious that the association might be accidental. 2. A number of cases of nasal disease might be taken and the frequency of asthma among them be determined. Thus asthma was associated with nasal polypi in nine out of 300 cases (Bäcker), in seven out of 200 cases (Hering), that is in 3·2 per cent. Schmiegelow's percentages were higher—51 out of 239 cases of nasal polypi and 40 out of 502 of chronic rhinitis. Francis in a recent paper maintained that when asthma was associated with nasal lesions the prospects of relief by treatment were less promising than when there was not gross disease. All these statistics were unsatisfactory because of the indefinite meaning attached to the term "asthma," yet they were sufficient to establish a connexion. At any rate, sufficient cases were recorded, and some few Dr. West said he had seen in his own experience in which true asthma associated with nasal disease had been cured or greatly relieved by removal or treatment of that disease. A few cases were also recorded in which asthma had actually been produced in persons not previously known to be asthmatic by intranasal treatment. They might conclude, therefore, that there was a relation between asthma and intranasal disease, but that its frequency was by no means so large as the published statistics seemed to show. Dr. West added that he did not believe any person who was not already asthmatic could be made asthmatic in that way, any more than he could be made epileptic by similar means. As regards the results of treatment he expressed his general agreement with the experience of Sir Felix Semon that though relief might be given in a few cases the prospects of cure were small Asthma, he said, was a respiratory neurosis and closely resembled epilepsy Given the asthmatic or epileptic predisposition in either case the attack might be excited by stimuli from various parts of the body It was therefore the rule to search for a source of irritation and when found to remove or treat it So in asthma when nasal disease existed it was fair to try the effect of treatment Relief might be given, though cure was unlikely, the relief of asthma by remedies applied to a healthy nose might be compared with the checking of an epileptic fit by tying a garter tightly round the leg below the knee Asthma being a neurosis, the effect of mental impression in estimating the result of treatment must be allowed for In conclusion, he said that knowing only too well how difficult the treatment of asthma often was he should be only too glad to treat any possible source of irritation he might discover in the nose or elsewhere in the hope that he might be fortunate enough to give relief

In the general discussion which followed

Mr A J BRADY (Sydney, N S W), whilst holding no strong views on the subject of the treatment of asthma said he preferred to take a middle course between the two openers and referred to cases where benefit had been afforded by nasal operation

Mr COLIN CAMPBELL (Southport) referred to what he called the non obvious cases of nasal disease associated with asthma—namely, those cases which presented no nasal lesion between the attacks but in which during the attack swelling of the nasal mucosa with obstruction was present He had used radium in place of the galvano cautery, and spoke favourably of intratracheal injections for the treatment of asthma

Dr J WALKER DOWNIE (Glasgow) held that polypi were a more common cause than had been stated If the asthma were not relieved by their removal then the latter had been incomplete and some polypi had been left behind and probably high up in the crevices of the nose

Dr STCLAIR THOMSON considered that cases of asthma were not so common as had been stated The patients were often only mouth breathers by night and suggestion played a very large part in the matter

Dr H ALEXANDER FRANCIS (London) had found that the majority of asthmatics had normal noses and that the polypus factor had been overstated The relationship between asthma and the nose he did not regard as that of a nasal disease but as an "inhibition of exchanges "

Dr WATSON WILLIAMS regarded asthma as a neurosis and never relied on any intranasal treatment alone to cure a patient He had found the faradic current to be of service

Dr PEGLER questioned the correctness of the diagnosis of asthma in many cases

Dr SCANES SPICER admitted that when he used the term "asthma " he was at a loss to know precisely what it meant He considered that the physicians should define the term "asthma," "bronchitic asthma," and similar terms which they had introduced He could not lay claim to have cured a case of real asthma

Dr MACRAY MACDONALD (London) cited a case of true asthma in which the patient had a large perforation of the triangular cartilage of the nasal septum

Dr HARING, Dr PRICE BROWN, Dr H TILLEY Dr H SMURTHWAITE (Newcastle) Dr NEWCOMB (New York), Dr DONNELLAN, and Dr DOBSON HORNE (London) also took part in the discussion

The PRESIDENT congratulated the section upon the selection of the subject for discussion as justified by the interesting remarks it had brought out and Dr GREVILLE MACDONALD replied

Dr EUGENE S YONGE (Manchester) demonstrated his model of Meyer's apparatus for Laryngeal Demonstrations He also read a paper on

Some Observations on the Mode of Origin of Nasal Polypi

The paper was largely illustrated with diagrams and drawings of microscopic preparations to demonstrate the results of Dr Yonge's investigation into the pathogenesis of the disease

Dr WALKER DOWNIE contributed a paper entitled Two and a half years' Experience of the Subcutaneous Injection of Hard Paraffin for the Removal of Deformities of the Nose "

Dr PEGLER made a communication on "Benign Neoplasms of the Septum Nasi with particular reference to Bleeding Polypi " The paper was based upon a series of cases of bleeding polypus which had from time to time been brought before the Laryngological Society of London and was illustrated with drawings of the sections

DERMATOLOGY

WEDNESDAY, JULY 27TH

Dr T COLCOTT FOX (London) presided over the section and welcomed the guests

Dr A DOUGLAS HEATH (Birmingham) read a paper on

Acne Keloid

and demonstrated a case The patient had a large red raised surface on the left side of the face and neck the ear being greatly swollen Dr Heath said that there had certainly been some staphylococcic infection The patch had been treated by the x rays

The PRESIDENT considered that the case was difficult to diagnose but it certainly differed from the ordinary type of acne keloid

Dr H G BROOKE (Manchester) had had a case of acne keloid which after treatment with the x rays resembled in many respects the case shown

Dr GILCHRIST (Philadelphia) mentioned that the disease was very common in negroes

Mr J M H MACLEOD (London) thought that the granuloma shown in the sections was very like lupus and that it was not sufficiently recognised that granulomata of this kind could be produced by the staphylococcus aureus and also by other micro organisms

Dr W T FREEMAN (Reading) demonstrated a case of

Leucokeratosis Buccalis

The patient was a young man with dry and sore lips and on the inside of the lips and cheeks were numerous small white patches There was a history of excessive smoking but this had ceased

Dr GILCHRIST expressed the opinion that in many of these cases sebaceous glands would be found in the mucous membrane and these patches were the result of disease of these glands

Dr FREEMAN also demonstrated a case of

Epidermolysis Bullosa

The bullæ had appeared ever since birth and some were present on the elbows One toe nail was wanting

Dr H RADCLIFFE CROCKER (London) mentioned that he had a patient in University College Hospital suffering from this disease in whom the mucous membranes of the conjunctiva and larynx were also affected

Mr G PERNET (London) said that he had recently shown a case in which the conjunctiva was detached from the tissue underneath

Dr GILCHRIST said that it had recently been shown that the deepest layer of the epidermis was very unstable in this affection

Dr LESLIE PHILLIPS (Birmingham) inquired as to the prognosis in these cases A patient under his care, though suffering severely as a child, had become perfectly healthy on attaining adult life

Mr MALCOLM MORRIS (London) opened a discussion on

Pruritus Ani

He pointed out that pruritus ani might be a symptom or an essential disease As a symptom it might depend on general or on local causes It might be due to gout not infrequently alternating with acute attacks in the toe Certain articles of diet such as shell fish and strawberries, might give rise to it and tobacco might have a like effect Rheumatism albuminuria and diabetes might also give rise to it Of the local causes the most frequent were piles, constipation fissure fistula, ulceration, foreign bodies worms pediculi growths and irritating discharges Cutaneous diseases of the region might also cause pruritus It should not however be forgotten that pruritus ani might be a reflex symptom dependent on disease of the genito urinary system or on pregnancy or gall stones As an essential disease there was not much to be said It was a sensory neurosis often originating in emotional disturbances of a depressing character Bronson thought that itching was predisposed to by hyperæsthesia The disease might occur at any age but the cause would vary with the age. In children intestinal worms would be the cause; in young men, local congestion from much sitting, balanitis, and other affections of the genital organs; in young women, menstruation or leucorrhœa; in middle age, piles, constipation, or prostatic disease; in women at the climacteric, one of the many disorders of the menopause; and in old age, venous stagnation, the pressure of growths, or the irritation of ulcers. The scratching might give rise to many secondary conditions and the itching might cause much loss of sleep and mental disturbance. The itching was especially severe at night. Though both sexes were attacked men were more often affected. Mr. Morris considered that most cases were due to the irritation caused by decomposed sweat or to excessive sebaceous secretion. As to treatment, the disease was often refractory but few cases were incurable. Any obvious disorder of the body must be appropriately treated and any local morbid condition found, such as piles, must be removed. The bowels must be regulated, a bland diet ordered, and highly seasoned food must be forbidden. Abstinence from alcohol must be insisted on and coffee must be denied. Calomel, ichthyol, and salol were all useful as intestinal antiseptics. Aloes was contra-indicated. Tonics might be needed. Sedatives and narcotics should rarely be given and opium was especially unsuitable as it had a tendency to cause itching. Large quantities of weak alkaline waters were often a potent aid to local treatment. When all other treatment had failed a course at Harrogate, Strathpeffer, Bath, or Marienbad often proved successful. Locally the most scrupulous cleanliness must be enjoined. The anus must be washed regularly night and morning. Bathing the part with very hot water was of much use and oatmeal, bran, borax, or carbonate of soda might with advantage be added to the water. In some cases very cold water gave more relief. If there was profuse perspiration a weak antiseptic lotion was useful. Of local anodynes cocaine was the most useful, as a suppository, or as an ointment, or as a lotion, but care must be taken not to let the patient acquire the cocaine habit. Menthol was also useful. Strong solutions of bicarbonate or bisulphate of soda were of value. Carbolic acid and tar preparations suited some cases. Balsam of Peru, chloral hydrate, benzoin, and tincture of iodine were of great value. Mercury salts were useful as antiseptics, such as ammoniated mercury and calomel. Nitrate of silver was sometimes effective when applied as a caustic or the actual cautery might be used. Stretching the sphincter might be needed if it was unusually tense and the wearing of a bone plug might be of value. The patient should be kept cool in bed and sleep between linen sheets. Static electricity and high-frequency currents had proved useful in certain cases. There was a distinct risk of over-treatment but the right remedy could be found only by trying all things and holding fast to the good. Perseverance was necessary on the part of the medical attendant as well as the patient. In the purely neurotic forms of pruritus the less local treatment was used the better. Arousing the sufferer to a sense of his duties and responsibilities would often do more than any kind of medicament. Much tact and not a little firmness would be needed in dealing with these patients who had generally no self-control. Hypnotic suggestion had occasionally been successful.

The President, Dr. Radcliffe Crocker, Dr. Eliza L. W. Dunbar (Bristol), Dr. Freeman, Dr. M. B. Hartzell (Philadelphia), Dr. J. A. Brookhouse (Nottingham), Dr. Norman Walker (Edinburgh), Mr. Pernet, Dr. A. J. Harrison (Bristol), and Dr. Gilchrist joined in the discussion.

Dr. Hartzell read a paper on

Benign Cystic Epithelioma of the Type Tricho-epithelioma (Jarisch) and its Relation to so-called Adenoma of the Sweat Glands.

The case on which the paper was based was that of a girl, 14 years of age, and the growths were shown by the sections to have started definitely from the epithelial lining of the hair follicles. Dr. Hartzell maintained that all the cases descirbed under a variety of names, such as syringo-cyst-adenoma, acanthoma adenoides, and syringo-cystoma, were examples of one condition, though differing in certain points.

Dr. Brooke, while agreeing that all these cases belonged to the same series, maintained that in most instances the epithelial growth arose from the ordinary basal epithelium of the skin. He thought that the growths were really a form of nævus.

Dr. Gilchrist thought that from the photographs in this case the growths arose from the hair follicles.

Mr. Pernet read a paper on

The Bacillus Pyocyaneus and Pemphigus Vegetans.

He described a case of pemphigus vegetans in which he had found the bacillus pyocyaneus in pure culture. The man worked in sewers. Mr. Pernet pointed out the possibility of man becoming infected by bacillus pyocyaneus from sewage and thus developing cutaneous manifestations clinically like pemphigus vegetans.

Thursday, July 28th.

Dr. Brooke showed some sections of his cases of Epithelioma Adenoides Cysticum as bearing on the paper read on Wednesday by Dr. Hartzell.

Dr. V. H. Rutherford (London) showed a well-marked case of

Urticaria Pigmentosa

in a boy, aged 17 years. It was of four years' duration and was distributed as pigmented nodules and macules on the extremities and trunk, only the face, the palms, and the soles being free. Each lesion was of about the size of a split pea. The buccal mucous membrane presented symmetrical white patches. Itching was entirely absent and there was no history of wheals or bullæ, but factitious urticaria was readily developed. Sections of nodules presented (1) an increase of the ordinary pigment in the palisade cells of the epidermis, and (2) an infiltration of mast cells in the papillæ and upper layers of the corium.

The case was discussed by Dr. Fox, Dr. Brooke, Dr. Gilchrist, and Dr. Crocker, and it was considered to be a good example of the rare commencement of the disease so late as the fourteenth year.

Dr. J. H. Sequeira (London) opened a discussion on

The Comparative Value of the Old and New Methods of Treatment of Lupus Vulgaris and certain other Skin Diseases.

Dr. Sequeira commenced by saying that the very fact that a debate on the comparative value of phototherapy and radiotherapy and the older methods of treatment had been approved was in itself an indication that the exact position of these measures had not yet been authoritatively determined. The settlement of the question would be materially advanced by the meeting. The greater part of the paper was necessarily devoted to the treatment of lupus vulgaris. The only possible cure of the disease lay in the sterilisation or the complete removal of the affected tissue, not only the visible lupoid lesions but also the surrounding zone already invaded by the specific organism, though not yet showing definite disease. When the face was affected cosmetic considerations should have weight, and if there were two equally efficient measures that which caused the less disfigurement should be preferred. When the disease was situated on the trunk or limbs cosmetic considerations were of minor importance. Excision was the most rational method but it was only applicable to early lupus. In most cases when first seen by the dermatologist excision was usually out of the question because of the deformity which would result. Even skin grafting was not altogether satisfactory from the cosmetic point of view, as the graft was usually of a different colour from the surrounding skin. The want of success in excision was often due to the fear of removing too much, the surgeon naturally trying to limit the amount of disfigurement. Lang himself recorded only 48 per cent. of cases without recurrence. Scraping was usually most unsatisfactory. It removed the visible nodules but as a rule the infected zone beyond them was untouched. The opening up of lymphatic spaces, the natural channel of tuberculous infection, and the want of care in sterilising the instruments between the removal of nodules were undoubtedly a cause of spread of the disease when the operation was carelessly done. Scraping should only be used for the removal of granulations and it should always be followed by caustics or the cautery. It should never be employed at the margin of a patch. Caustics and the actual cautery were too uncertain and led to excessive scarring if used sufficiently to destroy the deep nodules, but they might be used on the mucous membranes as an adjunct to other treatment. Pyrogallol and potassium permanganate were valuable for reducing warty masses and fungating granulations. Scarification gave good scars but it was tedious and inapplicable to deep lupus. The Finsen light treatment with certain limitations was the best treatment for lupus of the skin. The tissues were sterilised with the minimum amount of disfigurement. It was of very great importance to treat thoroughly the margin of a lupus patch and by the Finsen method this was done without any scarring As a result of the care bestowed on the margin of a patch recurrences outside the lupus area treated by the Finsen light were very rare The light must be sufficiently strong to penetrate to the deep nodules and the only forms of apparatus which could effect this were the Finsen and the Finsen Reyn lamps The Lortet and other lamps would cure superficial lupus but even with long sittings the deep nodules in some cases could not be reached The Finsen treatment required constant skilled attention and this was the cause of its expense The preliminary injection of erythrosin as suggested by Dreyer caused severe and very painful reactions and it remained to be seen how far this sensitising of the tissues was likely to prove satisfactory Untouched cases of lupus did best with the light treatment, for where there were much pigmentation and scar tissue cases often proved refractory The main difficulty was the concurrent affection of the mucous membranes for these could rarely be reached by the light and required other treatment Ulcerated surfaces should be prepared for the application of the Finsen treatment and warty masses should be removed by *pyrogallol or other caustics In a few extensive cases* the treatment had had to be abandoned Statistics of the results of the treatment at the London Hospital were given which showed that during the last four and a half years 216 patients had been discharged well and remained well up to date Of eight cases discharged well no recent information had been obtained Three had died from phthisis or miliary tubercle, in 11 cases the light treatment was abandoned as useless, and in 45 cases the patients left for treatment elsewhere or on account of illness The x ray treatment was of the greatest value in the treatment of lupus vulgaris The rays healed up ulcerated surfaces but rarely completely cured, as nodules were usually found in the scar tissue The scar was not always satisfactory for it frequently had telangiectases and there was a decided risk of epithelioma if the treatment was pushed for a long time The x rays were particularly of service in those cases in which the Finsen treatment was inapplicable especially for ulcerated surfaces and when the mucous membranes were affected In the latter cases however relapses were very common For lupus of the skin the results were not in any way comparable with those of the Finsen treatment Radium had been found to remove *nodules but in the small quantity in which it was at present* available it had but a limited field of usefulness High frequency currents stimulated the ulcerated surfaces to heal but did not remove the lupus nodules As to the choice of measures Dr Sequeira considered that for moderate cases of lupus of the skin of the face the Finsen treatment was best preceded by the x rays if ulceration was present or by pyrogallol or permanganate of potassium if the surface was warty or fungating In lupus of mucous membranes the x rays should be used, preceded if fungations were present by the cautery For dry areas of lupus on the trunk or limbs excision was best with, if necessary, skin grafting but if ulceration was present the x rays might be used For widely disseminated lupus probably the best results would be obtained by the tuberculin treatment as recently demonstrated by Professor Wright For lupus erythematosus local measures such as excision scraping scarification caustics the x rays and the Finsen treatment all sometimes removed the lesions, but recurrence was the rule The cause, which was probably a general one was not removed and a cure could not be expected by local measures High frequency treatment was followed by improvement in a few cases but was untrustworthy For the treatment of rodent ulcer the choice lay between excision *x ray treatment and the application of radium* Excision had a limited field of usefulness and could not be recommended unless it could be carried wide of the growth The fact that the disease was so common in the neighbourhood of the eyelids and nose rendered complete excision impossible in many cases The results of the x ray treatment were on the whole, very satisfactory Where the edge was raised [illegible] to the level of the skin [illegible] st rapid results If the [illegible] d be enucleated and the contents of the orbit removed and the x rays applied to the cavity Of 89 completed cases treated at the London Hospital 30 had had more than one course of treatment that is to say in about 33 per cent there were relapses which as a rule were very easily removed Four cases were found to be intractable, and in two epithelioma developed, a condition which could scarcely be attributed to the x rays, for it was recognised long before the introduction of the x rays that in a small proportion of cases of rodent ulcer epithelioma was liable to supervene In two cases which failed to respond to the x rays radium effected a cure Radium was especially useful in cases of rodent ulcer of the eyelids and in the nose parts to which the x rays could only be applied with great difficulty The x rays had *given very* disappointing results in epithelioma proper Only cases where operation had been refused or was impracticable were treated The local lesion had disappeared but the enlargements of [illegible] more resistant In mycosi[illegible] at present the only mean[illegible]

Dr BROOKE agreed that the Finsen method was the best for unbroken lupus When the mucous membranes were affected high frequency currents had given good results as by passing a vacuum electrode into the nasal cavity The Roentgen rays were very useful and for sycosis they were a powerful therapeutic aid

Dr MACLEOD considered that the telangiectases following *the x rays were very difficult to remove For intra nasal* lupus radium was probably the best In leprosy the nodules were removeable by the x rays

Mr J HALL EDWARDS (Birmingham) had found the x rays most suitable for extensive cases of lupus

Dr S E DORE (London) said that in untreated cases of lupus vulgaris of small extent the Finsen method was the best because it gave the best scars, even if there was much scarring from previous treatment the Finsen treatment was best In cases of extensive but superficial lupus the preliminary treatment with the x rays would reduce the disease so that the isolated nodules might be treated with the Finsen light, or the two methods might be used concurrently If there was extensive disease with dense masses of lupus infiltration preliminary surgical measures such as scraping or excision, were needed before employing the Finsen light or the x rays

Mr PERNET mentioned that he had obtained good results with the Lortet Genoud lamp

Dr GILCHRIST thought that in the treatment of malignant disease the x rays were useless if they had to pass through healthy skin In the treatment of acne vulgaris the x rays were a valuable adjunct

Dr O'BRIAN had found radium of value in treating the nodules of Bazin's disease

Dr HARTZELL had employed with benefit the x rays in psoriasis

[illegible] found diseased foci in [illegible] Scraping alone was un[illegible] wed by the cautery Radical treatment had the great advantage that it saved the patient from the possibility of pulmonary phthisis which not rarely followed neglected lupus For lupus nodules nitric acid applied on a match destroyed the roof and then the yellow oxide of mercury ointment might suffice to cure the nodule

Dr F G GRAHAM LITTLE (London) expressed a high opinion of the value of Professor Wright's inoculations for lupus and in severe sycosis

Dr FOX thought well of the x rays in parasitic conditions such as ringworm

Mr HALL EDWARDS read a paper on

Chronic X ray Dermatitis

illustrated by two cases and in the discussion which followed Dr CROCKER advised the constant application of lactate of lead especially for the acute forms of x ray dermatitis, and Dr NORMAN WALKER emphasised the importance of prevention

FRIDAY JULY 29TH

Dr MARTIN demonstated a case of Kaposi's Sarcoma The patient was 75 years of age and the disease first appeared on the feet and arms as bruise like spots They had gradually spread and microscopically they had the structure observed in cases of this disease

Dr ARTHUR WHITFIELD (London) opened a discussion

On the Relative Importance of the Bacterial and Other Factors in the Causation of Skin Diseases

He commenced by saying that of recent years the very great importance of bacteria in connexion with the production of diseases of the skin had received full recognition and he ventured to suggest, that perhaps an undue importance had been assigned to them. The diseases of the skin which were associated with the presence of organisms might conveniently be divided into four groups. In the first group were put those skin diseases in which the contagiousness was marked and the disease was undoubtedly the effect of the presence of a special organism. As examples of this class, might be quoted ringworm and soft sores. In the second group were put those diseases of which the contagiousness was not marked, but a special organism was present. Inoculation was difficult. An example was pityriasis versicolor. In the third group the contagiousness was certain but the organism was present on normal skin. Impetigo contagiosa would fall into this group. In the fourth group may be placed those skin diseases of doubtful contagiousness; an organism was present which was usually to be found on healthy skins. As examples may be mentioned seborrhœa and acne. With regard to the first group the organism was the essential element in the etiology, and as the contagiousness was marked the suitability of the soil was not very important, but even in this group it could not be disregarded; for instance, in the case of ringworm there were few children who escaped and adults were but little liable to the affection. In the second group the suitability of the soil was of much greater importance, and therefore it was more difficult to inoculate the disease, even though we were quite sure that the organism was the cause of the disease. In the third group the organism was certainly of importance as was shown by the ready inoculability of the disease but there were other conditions which must coöperate. For instance, every one knew that pediculi capitis gave rise to an impetigo contagiosa; it was not merely the scratching, for other forms of irritation of the scalp did not cause impetigo. Dr. Whitfield was inclined to think that the pediculi in some way prepared the skin for the organisms of impetigo contagiosa. Possibly the streptococcus might become modified, for it was known that streptococci could be trained to attack different parts of the body. Staphylococci impetigo was not very infectious and probably a streptococcic infection preceded it. The diseases placed in the fourth class usually occurred in persons suffering from some defect of health, though the presence of the local organism was probably also required. This subject naturally led to the question, What are the normal flora of the skin? Sabouraud says that there are no normal flora—that is to say, that in health organisms did not grow on the skin, though individual microbes might lodge in the irregularities of the surface of the skin. There was much to be said in favour of this view. It should be borne in mind that the secretions of the skin were very suitable culture media for micro-organisms. Therefore if any secretion was excessive the organisms which were merely lying in units on the skin might suddenly develop and form colonies. If a man sweated much the sweat soon became sour because of its having undergone decomposition. In seborrhœa three main organisms have been described: (1) the microbacillus of Sabouraud; (2) the bottle bacillus; and (3) the non-liquifying bacillus. The microbacillus of Sabourand was present on all oily skins; it could be found in acne and in cases of greasy baldness. Dr. Whitfield, bearing in mind the oiliness of the skins of negroes, examined some cases and found this bacillus present in large numbers. It was also present in the comeda. He did not look upon this bacillus as the cause of the excessive secretion, whether this was derived from the sebaceous glands only or from the sweat glands as well. He considered it as very doubtful if the bacillus had anything to do with the fall of the hair, for in women there were many microbacilli but rarely loss of hair. The bottle bacillus was always to be found where the sebaceous glands were well developed. It was found in great abundance in the grouped comedones of infants. Unfortunately it had never been found possible to grow the bottle bacillus. The non-liquifying bacillus was very plentiful. It could be found not only in seborrhœa, but elsewhere, as in the dry pityriasis of the face. Dr. Whitfield had attempted to inoculate it but had not been successful. In seborrhœa eczema there were probably two factors: (1) free secretion and (2) septic organisms; neither could have any effect without the other. Probably another etiological element was a toxin absorbed from the alimentary canal, for faults in metabolism had a marked effect on the irritability of the skin. The paper was illustrated by lantern slides.

Dr. GILCHRIST expressed the opinion that much work on the flora of the skin had been done by surgeons. With regard to the etiology of acne he had found the bacillus acnes 60 times in succession and had been able to grow it in acid glycerine agar. Also he had been able to show that the blood of acne patients caused agglutination of the bacillus acnes, but this did not happen in cases not suffering from acne. This was a very strong proof in favour of the specific action of the bacillus acnes.

Dr. FOX considered that comedones were only an exaggeration of the little plug which was so commonly found in sebaceous glands.

Dr. LESLIE ROBERTS (Liverpool) expressed his surprise that so little stress had been laid on heredity in seborrhœa. He thought it should be borne in mind that seborrhœa was not a secretion but purely an exfoliation.

Dr. EDDOWES said that he had often noticed that those who lost their hair from seborrhœa had previously had a great quantity of hair and he was therefore inclined to think that the first action of the disease was to stimulate the growth of the hair.

Dr. A. DOUGLAS HEATH (Birmingham) thought that symbiosis might explain many of the difficulties.

Dr. DORE asked for information as to the standardisation of culture media, as he could not make some organisms grow which Sabourand said would grow.

Dr. W. K. WILLS (Bristol) drew attention to the action of x rays on acne; the eruption was probably removed by the drying up of the secretion.

Dr. LITTLE mentioned that when the staphylococcic inoculation method of Dr. Wright was employed only the staphylococci were removed and yet the eruption disappeared although the other organisms were left.

Dr. GILCHRIST read a paper on

Erysipeloid

based on 329 cases. The eruption consisted in erythematous blotches on the hands with a well defined red edge. There was often much pain but lymphangitis was rare. There was no tendency to suppuration. The cases appeared at Baltimore in June and disappeared in August. In 323 of the cases the patient had been pinched by a crab or scratched by a piece of the shell at the centre of the patch. The incubation appeared to be about two days on an average. It tended to disappear after a few weeks. He had been unable to find any organism and inoculation experiments had failed. Injections hypodermically of crushed crabs had had no effect. He was inclined to think it was due to a toxin and not to an organism.

Several members stated that they had never seen the disease, but others had seen a few cases.

Dr. ROBERTS read a paper on "Non-parasitic Cutaneous Reactions."

Dr. G. NORMAN MEACHEN (London) read a paper on

The Influence of Peripheral Nerve Irritation upon the Production of Diseases of the Skin.

It was now generally recognised that many cutaneous manifestations were connected with the trophic influences of the nerves of the skin, but it had not been sufficiently acknowledged that local irritation of the peripheral nerves might influence the production of skin diseases. The dental theory of Jaquet provided a very plausible explanation of one variety of alopecia areata, especially as in many cases the extraction of the carious tooth had been speedily followed by a return of the growth of the hair. The ocular nerves might possibly also possess considerable influence upon the progress of alopecia areata. Pernet and Whitfield had both suggested that the loss of growth of the hair might be due to errors of refraction, and cases had been described in which the hair was quickly renewed after the prescription of appropriate glasses. The influence of dental irritation in provoking eczematous outbreaks in infants had long been recognised. Irritation arising from cerebral and spinal nerves might predispose to eruptions of an herpetic type, and Gaucher had related several cases in which herpes appeared after quite superficial injuries. In such cases it was reasonable to suppose that the contusion of minute terminal nerve filaments acted as a source of irritation and so determined the appearance of an eruption. Scratching appeared to give rise to lichen planus and possibly the scratching might act reflexly.

TROPICAL DISEASES

THURSDAY, JULY 28TH

Dr J W W STEPHENS (Liverpool) opened the discussion on

The Prophylaxis of Malaria

He pointed out the necessity of regarding malaria as a contagious disease, the source of contagion being principally the child population carrying malarial parasites in its blood The species of anophelines which conveyed malaria in a greater or less degree were —(*a*) In Europe the anopheles maculipennis, anopheles bifurcatus, P superpictus and M pseudopictus (*b*) In Africa anopheles maculipennis P costalis M funestus and P chaudoyei (*c*) In India M Listoni, M culicifacies and N maculipalpis (?) (*d*) In North America anopheles maculipennis (*e*) West Indies anopheles albipes In all there were about one dozen out of 100 known species It was therefore important before undertaking the extermination of anopheles in any given district with a view of preventing or eradicating malaria to determine the variety of anopheles present otherwise useless expense and labour might be involved Some mosquitoes bred in dirty puddles for instance the M Rossii which was harmless, others preferred clean water and streams such as the M culicifacies which was an active agent in spreading malaria It was therefore useless to sweep out the foul puddles and to leave the running streams uninvestigated The normal flight of anophelines did not exceed some hundreds of yards, therefore in the centre of towns although some kinds of mosquitoes prevailed such as stegomyia anopheletes were only met with in the outskirts where clear running water was ... In India it was proved th

a mile from anopheles

from malaria, in Free

distance was less—about from a quarter to half a mile only The measures usually adopted for the prophylaxis of malaria were the following 1 Anti larval This was the fundamental method of prevention and should in the form of

in certain instances effective 3 Segregation of Europeans On general sanitary grounds this was highly to be recommended the natives being the source of infection to Europeans The objection to this plan was that the native was neglected while he ought to be regarded as worthy of protection as the white man When the native was advanced in sanitary and general education to the same position as the white man this sentimental idea might be listened to but not till then Of the determined attempts to exterminate mosquitoes the operations at Ismailia and Mian Mir (Punjab) were the best known The former was in a limited area, the latter in a large cantonment where irrigation canals were numerous and therefore difficult to deal with but the failure at Mian Mir was due not to the irrigating channels within the area but to immigration from without

Major RONALD ROSS C B (Liverpool), read a communication upon

The Anti Malarial Experiment at Mian Mir (Punjab)

With a view to demonstrate b

of all anti malarial measures

of anopheles larvæ, operations a

In criticising these operations Major Ross dealt with the omissions in the report of dates maps and the number of the population of the cantonment There was an indefinite account of the organisation at work on the experiment but the amount of money expended seemed too small for a large undertaking of the kind to have been thorough The test applied for ascertaining the reduction in the number of mosquitoes present seemed also unsatisfactory Individual experience in regard to these points appeared worthless and only the general consensus of opinion could be approximately relied upon The test for malaria reduction by the examination of the blood of the native children in the neighbourhood was a long one and of a variable quantity The effect of the operations by Captain S P James, I M S and Lieutenant S R Christophers I M S on the number of mosquitoes although extending over one and a half years was inappreciable or even negative The operations at Mian Mir proved little or nothing except that in an area of the extent of the cantonment selected for experiment it was impossible by the expenditure of £200 or £300 to make any impression on the number of mosquitoes within the area or on the amount of malaria present They had still to determine in work of this kind (*a*) the radius of operations required to reduce the density of a given species of mosquito to a given percentage, and (*b*) the percentage of mosquito reduction required in order to obtain ultimately a given percentage of malaria reduction

Captain JAMES and Lieutenant CHRISTOPHERS contributed a paper on

The Success of Mosquito Destruction Operations at Mian Mir (Punjab)

They carried on the work of mosquito destruction and malaria reduction for over two years and the result of the attempt according to their statement was in both cases poor and totally out of proportion to the means employed They did not ascribe the failure to want of thoroughness or to peculiar conditions in Mian Mir but considered that the difference between their efforts and those of others was entirely due to the great disparity in the value of the tests used in estimating the reality of results achieved The Mian Mir experiment proved the difficulty of conducting successfully operations of the kind Local destruction of breeding places was quite futile so long as the infiltration of adult mosquitoes from outside the area operated upon was possible Captain James and Lieutenant Christophers had no hesitation in challenging as absurd the reported successes of mosquito brigades in ridding a town of malaria

Dr ANDREW DUNCAN Lieutenant Colonel I M S (retired) said that in military campaigns in tropical countries it was necessary to pay attention to the race and age of the soldiers to the season of the year for operations to the clothing of the men the period of marching the camping grounds the food and the precautions at night Dr Duncan recommended that flannel should be worn that the food should be sufficient and the diet not a monotonous one and that where possible the soldier should sleep on the ground with merely a blanket for bedding Malarial fever was to be prevented by (1) protection against the infected mosquitoes (2) destruction of the infected mosquitoes and (3) prophylactic drugs Quinine was the best medicinal prophylaxis in doses of three grains every morning

Mr W HENRY W STRACHAN C M G principal medical officer of Lagos West Africa sent

Notes on the Prophylaxis of Malaria

The rule to be observed in malarial areas should be ' Do not permit yourself to be bitten by mosquitoes This involved measures taken for the destruction of mosquitoes but these involved an expenditure of money and time almost entirely out of the range of practical work Mosquito destruction resolved itself into elimination of all areas where the breeding of mosquitoes was possible or probable be it wells swamps puddles around houses tanks flower vases &c To ward off adult mosquitoes mosquito nets mosquito proof rooms punkahs and burning certain materials in rooms should be resorted to Among accessory measures Mr Strachan advocated the prevention of chill avoiding exposure in the sun during the hottest time of the day and temperance in all things Quinine as a prophylactic in daily doses of five or six grains or in larger doses once or twice weekly was attended with marked benefit When quinine could not be taken thiocol promised fairly well as a malarial prophylactic There was much to be said against the segregation method of dealing with malaria but although in theory it was not carried out in practice race associated with race and solved the problem involuntarily At the present time anti mosquito measures and the administration of quinine summed up the prophylaxis of malaria

In the discussion which followed these papers on the prophylaxis of malaria the following took part

Colonel KENNETH MACLEOD I M S (retired) referred to the food of the mosquito larva and considered this an essential point in the matter of malaria prophylaxis The conveyance of mosquitoes by railway carriages and ships was no doubt a possible means of dissemination The use of the broom in sweeping away dust from dark corners where mosquitoes lodged was an important element in prophylaxis Irrigation was so necessary a part in the agriculture of India that to sweep it away would mean famine, other methods, such as improved drainage, would no doubt be found which would render this unnecessary

Dr D E ANDERSON (Paris) remarked that the smoke in the native huts in Madagascar served as an efficient mosquito destroyer; the smoke merely paralysed the mosquito, however, for the time being.

Major G. H. FINK, I.M.S. (retired), stated that there were many points in Dr. Stephen's paper which placed us in a very difficult position as to the prime origin of malaria while considering Ross's investigations with regard to the particular species of anopheles in which he (Ross) had found the malarial parasite. Plehn's "primitive bodies" or karyochromatophile granules, mentioned in Manson's book, had yet to be thoroughly investigated, since it was acknowledged that very little was known about them, except that they are to be seen in the blood of Europeans on the West Coast of Africa soon after their arrival there, but attended with anæmia, and this before malaria had pronounced itself in the individual. It might be considered as a "latent phase" of malarial fever parasites, but an organism on the borderland between the vegetable and the animal, which presented both the male and the female element, which had to pass through the usual cycle before its exact position could be recognised in the body of the mosquito and before malarial fever was transmitted through the bite of that insect to man.

Dr. PHILIP O. MALABRE (Southport) inquired if there was any truth in the assertion that dragon-flies destroyed mosquitoes.

Captain C. E. WILLIAMS, I.M.S., stated that dragon-flies preyed on mosquitoes and where these flies existed in numbers mosquitoes were rare. He had lately raised dragon-flies from the larvæ and fed them on living mosquitoes which they seized when on the wing. Captain Williams had also raised nymphæ of various species of mantis and fed them successfully on mosquitoes.

Mr. F. J. A. BERINGER (Colonial Service Gold Coast) stated that he tried quinine prophylaxis in Hong-Kong amongst the British troops but without marked beneficial results. The cases of fever might have been a little less severe, but there was no diminution in the actual number of cases. The diagnosis of malarial infection was chiefly clinical but in many examined the malarial parasite was found.

Sir PATRICK MANSON, F.R.S., D.Sc., remarked that the failure of quinine to act as a prophylactic amongst troops in Hong-Kong led him to doubt the accuracy of the diagnosis of the kind of fever the soldiers were suffering from. In several countries, and especially some of the Pacific islands, malaria was unknown at present. It would be well to consider whether any means could be devised to ward off malaria from them.

Professor W. J. SIMPSON observed that it was a pity the experiment of mosquito extermination had been tried at Mian Mir. The cantonment did not lend itself to experimental work of the kind except under a properly organised staff, which at Mian Mir was quite insufficient. The recent proposition that the civil surgeons of five municipalities in India should carry out a campaign against mosquitoes was a mistake. The civil surgeons in India have an enormous amount of clinical and practical work without indulging in anti-mosquito crusades, and to ask these overworked medical officers to undertake extra duties of the kind proposed was certain to end in failure. India was without a proper sanitary organisation but for the sake of the people of India it would be soon created.

Dr. ALEXANDER CROMBIE, C.B. (London) remarked that we had recently been given two object lessons—one in Havana, where the work of destroying mosquitoes and eradicating yellow fever had been successful; and the other at Mian Mir, where the results had failed from want of sufficient organisation. So long ago as 1342 in Spain malaria was associated with the irrigation necessary for rice growing and the cultivation was prohibited by law. The work of the civil surgeons in India was enormous and to add mosquito destruction to their duties, considering the enormous tracts of country they presided over as health officers, was sure to be inefficiently performed.

Dr. LOUIS SAMBON and Major T. MCCULLOCH, R.A.M.C., also joined in the discussion.

Dr. F. M. SANDWITH (lecturer at the London School of Tropical Medicine) read a paper on

Infectious Jaundice.

He compared the disease, which was endemic in Smyrna and in Alexandria and epidemic in Nauplia in Greece, with the cases of Weil's disease reported from Germany, England, the United States, and China. He also suggested that the disease probably existed in India and other tropical countries, though masked under other headings. Infectious jaundice was an acute infection characterised by fever, jaundice, enlarged liver and spleen, and nephritis. It occurred chiefly among male adults during the summer months and was a filth disease engendered by contamination with sewage or putrid meat. He suggested mosquitoes or other insects as transmitters and recommended the destruction of all mosquitoes in one of the infected towns as a useful experiment. He gave reasons for not accepting the idea of this disease being yellow fever in a modified form and suggested that the differences between infectious jaundice and Weil's disease could be accounted for by variations in the climate, temperature, race, and sanitary surroundings.

Major H. B. MATHIAS, R.A.M.C., read a paper on

Jaundice in South Africa.

The experience of the disease was gained by Major Mathias during the late South African campaign, when jaundice seemed to have been prevalent amongst the troops, no fewer than 5648 cases being recorded. The period of greatest incidence was during the South African autumn and winter months from February to June. The severity of the disease varied; in some there was little, if any, pyrexia or constitutional disturbance; in others there were nausea, severe pains in the back, initial rigors, a temperature from 100° to 103° F., pain in the epigastrium and right hypochondrium, enlargement of both liver and spleen, and occasionally a pear-shaped tumour over the gall-bladder. The jaundice usually occurred during the third day of the illness and might persist a month or more. The mortality amongst British troops was *nil*, but the attack was followed by great debility and mental depression. Major Mathias concluded that the disease was due to a definite infection of a toxic form and that the poison was generated in consequence of insanitary conditions. That the jaundiced condition was associated with enteric fever would seem confirmed, for it appeared each year when enteric fever had reached its maximum in the autumn and was on its decline. This was in accordance with observations made elsewhere and was a point of great interest, but there was no direct evidence to connect the epidemiology of the two diseases, yet nevertheless it appeared that there was a distinct form of epidemic jaundice following outbreaks of typhoid fever, and clinical experience would point to the former being consequent upon enteric fever and not true Weil's disease.

Colonel MACLEOD remarked that in the island of Lewis some 45 years ago he remembered an epidemic of jaundice associated with pain, vomiting, fever, clay-coloured stools, and dark urine, &c., so that this disease was not confined to any particular country or locality.

Dr. M. A. RUFFER stated that in Alexandria he had witnessed outbreaks of bilious typhoid fever in which the mortality amounted to 20 or 30 per cent. of those attacked. He did not think that these were cases of Weil's disease. In bilious typhoid fever the patient became suddenly extremely ill; not so in Weil's disease. Moreover, no bacterium were found in the blood or tissue of bilious typhoid fever, nor did these infect animals when tested experimentally. Kidney lesions were noted in the Alexandria outbreak corresponding to those met with in yellow fever. Hæmorrhages round the hepatic veins and emboli of hepatic cells within the hepatic veins were met with.

Major ANDREW BUCHANAN, I.M.S., said that at one time there were in 1899 150 cases of epidemic jaundice in hospital at Nagpur. In these cases the temperature was raised for only a day or two, the symptoms were those of ordinary jaundice, and the patients lost weight. Only one of the persons attacked died. Adult natives in India were so seldom attacked by typhoid fever that it did not seem possible to connect the two diseases in this particular instance.

Mr. JAMES CANTLIE (London) described a case of Climatic Bubo in a patient from Mysore who had just landed in England. In Mysore plague was prevalent and the patient was freely exposed to plague infection. After leaving Mysore he called at Madras, Colombo, and Suez, and on the day before landing in England on Feb. 24th found a tender gland in the left groin. By March 4th, the evening temperature had reached 101° F. Febrile conditions continued, pus was found around the gland on March 7th, and the gland was excised. Specimens of the pus and gland tissue were sent to Professor Hewlett who succeeded in cultivating a bacillus resembling the plague bacillus. The cultures proved innocuous to animals. The association between climatic buboes and plague had been frequently referred to by Mr Cantlie and he had applied the name pestis minor to these complaints. A definite bacillus was found by Professor Simpson in Calcutta in cases of the kind and Mr Cantlie was inclined to believe that the cases of plague referred to by Koch as occurring in German East Africa were of the nature of pestis minor and not true plague. It was well known that climatic buboes had been prevalent for some time on the East African coast, and seeing that the centre of plague referred to by Koch had not extended at any known period, the probability of an extension inland from the eastern coast of Africa of the disease climatic bubo (pestis minor) explained the outbreak related by Koch. Lately Mr Cantlie had seen a case of climatic bubo from Northern Nigeria where the disease was described as a new complaint. It would therefore seem that the disease climatic buboes (pestis minor) was travelling across the African continent from east to west.

Dr M. CAMERON BLAIR (Northern Nigeria Protectorate) said that quite 25 per cent of the native soldiers in Northern Nigeria suffered during the year from indolent inguinal buboes which did not generally suppurate. He had always regarded these buboes as venereal in origin.

Mr JAMES CANTLIE read a paper upon

Subcutaneous Nodules attended by Febrile Attacks

in a patient from the Kolar goldfields, Mysore State. The patient had had several eruptions of these subcutaneous nodules. When seen by Mr Cantlie in London there were three nodules noticeable on the outside of the left leg, another on the inside, and a third on the front of the left thigh. The nodules felt like shotty particles beneath the surface, the skin over two of the nodules was slightly red for an area of a quarter of an inch all around the nodules. The patient had had similar lesions on the upper extremities and on the right lower limb, which came suddenly, lasted some three weeks, and disappeared spontaneously. With the appearance of each nodule a slight attack of fever occurred. Mr Cantlie excised one of the nodules and sections of the growth were made by Dr G C Low and exhibited. No parasite was to be seen macroscopically or microscopically, at one point in the nodule a freshly formed inflammatory thickening was evident with widely dilated lymphatic spaces. Mr Cantlie was unaware that a similar condition had ever been described.

FRIDAY, JULY 29TH

Major W B LEISHMAN, R A M C, opened a discussion on the Leishman-Donovan bodies with a paper entitled

The Nature and Significance of the Leishman-Donovan Body

The disease associated with these bodies, Major Leishman remarked, was by no means uncommon in the tropics. The first case in which the "bodies" were found was that of a soldier, invalided from Dum Dum in November, 1900, with tropical cachexia and splenomegaly, and soldiers at Netley presenting a similar clinical picture were so frequently found to have served at or near this station that he termed the condition "Dum-Dum fever." The name was, of course, only a temporary expedient. Since this discovery cases had been reported from three or four widely separated districts of India, from China, Tunis, Algiers, Arabia, and Egypt. The parasites, although originally found in the spleen, had since been met with in the liver, the mesenteric glands, the bone marrow, the kidney, and in ulcers involving the intestinal mucosa. The parasites appeared to be chiefly, if not solely, intracellular, and occurred in the protoplasm of large mononuclear cells, probably "macrophages." *Neither the parasites nor the cells which* harboured them appeared to suffer from their mutual association. In specimens obtained by splenic or hepatic puncture during life the parasites were, however, usually found free in groups of several members embedded in a structureless stroma, which was probably disintegrated remains of large mononuclear cells due to mechanical violence. The signs and symptoms of the physical condition associated with the "bodies" were (1) splenic and hepatic enlargement, (2) an earthy pallor of the skin, (3) a continued irregularly remittent fever; (4) hæmorrhages from the nose, gums, and subcutaneously, (5) œdema *of a transitory nature in the limbs;* (6) congestion of the lungs, diarrhœa, and dysentery had been observed, and (7) a marked mononuclear increase. The symptoms were very similar to those noted in kala azar, and Bentley and Rogers had found the bodies recently in the spleen of persons suffering from this disease. The nature of the parasite had been variously interpreted. (1) Major Ross believed it to be a new genus of sporozoa; (2) Laveran considered the bodies to belong to the piroplasmata and (3) Leishman thought the of a flagellate not actually by Marchand and Ledingham had led to the same conclusion as Leishman. Schaudinn, from observations made on the transformations undergone by a blood parasite of the stone owl when taken into the stomach of a mosquito (culex pipiens), came to the conclusion that this halteridium was, in reality, a sexual form of a true trypanosome to which he gave the name trypanosoma noctuæ. Prowazek supported Schaudinn's conclusions and it would seem that between the resting forms of trypanosomes these authorities described a very close resemblance with the Leishman Donovan bodies was traceable. From the frequency with which dysenteric complications had been reported in the course of the disease and the fact that the "bodies" had been found in ulcer of the intestine, they seemed to have a key to the channel of elimination of the parasite from the human body. The discovery by Wright that similar parasitic bodies were met with in Delhi boils was also of considerable importance. The announcement by Captain Rogers that trypanosomes had developed from cultures of these bodies seemed to clench the association between the bodies and trypanosomes.

Major C DONOVAN, I M S, sent a communication on

Human Piroplasmosis

Major Donovan accepted the view of Laveran and Mesnil that the Leishman Donovan body was a piroplasma. He found the parasite in 72 cases out of 1304 patients admitted into the General Hospital at Madras. The disease associated with the "bodies" attacked the poorer class of natives of Madras of both sexes and of all castes and creeds. Eurasians and Europeans were also subject to the disease. Amongst the signs and symptoms enumerated by Major Donovan he mentioned cancrum oris, œdema of the feet, and ascites. Amongst the causes of death he notified general infection, cancrum oris, œdema of the glottis, diarrhœa, peritonitis, broncho pneumonia, and one case of hæmorrhage from splenic puncture. Examinations of the blood in cases of piroplasma infection showed decrease of red corpuscles, no actual increase of leucocytes, but a relative increase of mononuclears. The urine usually contained albumin and invariably pigment. Four cases of the disease were related in detail by Major Donovan.

Dr CHARLES A BENTLEY (Tezpur, Assam) sent

Some Notes upon Kala azar and the New Bodies

Dr Bentley described kala occurring in many parts countries. Occasionally the form. Amongst the most notable signs and symptoms were gradual enlargement of the spleen and sometimes of the liver, emaciation, irregular fever, pain in the ends of the long bones, gastro intestinal or dysenteric symptoms, secondary anæmia, and occasional hæmorrhage from the stomach, gums, and nose. Of all forms of the disease the dysenteric was the most rapidly fatal. The disease was most resistant to treatment. Quinine was useless and removal to an uninfected site promised best. During an epidemic few might escape and the case mortality might reach 90 per cent. As the epidemic waned the virulence lessened until at last the patient would appear to be suffering from "ordinary malaria." The only accurate method of differential diagnosis was the examination of the blood drawn *from the spleen* during life. Dr Bentley described the parasite and its situation in relation to the blood cells. He considered that it had not at present been definitely shown that the "body" was more than the spore of some micro- or myxo sporidian and it might yet prove to be a phase in the life history of some flagellate or other organism. He had found the parasitic body in dogs, cats, goats, cattle, rats, deer, bats, fish, frogs, and snakes, but not in the stomach of any biting fly or insect, nor in any human skin lesion. An interesting observation by Dr. Bentley carried support to Sambon's contention that certain mud fish on the shores of the Victoria Nyanza had a determining influence in the spread of *trypanosomiasis*. In Assam Dr Bentley found that certain species of mud fish taken from marshes or pools adjacent to kala azar infected lines in nearly every instance showed marked trypanosomiasis and that fish taken from pools at a distance from any possible source of fæcal contamination appeared to be entirely free from trypanosome infection.

Captain LEONARD ROGERS, I.M.S. (*acting professor of* pathology, Calcutta), contributed a paper on

Cachexial Fever in India associated with Cunningham-Leishman-Donovan Bodies.

Captain Rogers said that he believed that the great majority of cases known hitherto as "malarial cachexia" occurring in Calcutta at any rate during the hot weather months, when true malarial cases were at their minimum, were really cachexial fever due to the new parasite. The most interesting part of Captain Rogers's paper referred to the cultivation of the protozoal parasite of cachexial fevers. In experimenting in this direction Captain Rogers added the blood obtained from splenic punctures of persons suffering from the disease to a small quantity of sterile citrate of soda solution to prevent the blood clotting and then kept it under different conditions. When the solutions were kept at blood heat the parasites very rapidly degenerated and disappeared; yet when placed in a cold incubator at 27° C. they retained their natural conditions for several days and stained perfectly. They also increased in numbers, so that instead of two cultures in a field of an oil immersion lens as in the freshly taken blood, after a day or two scores and even a hundred of very young forms could be found in the same area. Numerous divided forms were also found in even a single field, so that there was clear evidence of the survival and multiplication of the organism outside the body. When the temperature of the incubator was reduced to 22° C. the parasites were seen to multiply more readily, as many of the forms seemed considerably larger and appeared in a single day. Captain Rogers looked for flagellated bodies and found in two cultures unmistakable trypanosomes, together with smaller pear-shaped flagellated bodies and other intermediate forms. The more marked cases showed completely developed trypanosomes with thick flagella and macro- and micro-nucleus after incubation for one day, while the living forms were also seen in the blood culture moving rapidly among the corpuscles. It is worthy of note in regard to the possible method of spread of the disease that in October, 1901, Surgeon Chatterji found a trypanosome in the proboscis of a mosquito.

Tropical Splenomegaly and Oriental Sore

was the title of a paper by Lieutenant S. R. CHRISTOPHERS, I.M.S. The nature of the Leishman-Donovan bodies, according to Lieutenant Christophers, was as yet undetermined, but that they were affiliated with some flagellated organism would seem likely. He pointed out some time ago that the matrix of the zooglea mass was merely the cytoplasm of endothelial cells of the spleen, more especially that derived from the large macrophages. The "bodies" did not appear to be a parasite of the red blood cell and they would appear to be no more a blood parasite than were the organisms of septicæmia or the tubercle bacillus. Recently Wright in America discovered the "bodies" in the granulation tissue of tropical ulcer. In India Captain James also found them in oriental sore. Lieutenant Christophers found the "bodies" free in blood from the spleen and believed them to have been liberated artificially by rupture of cells, more especially the large macrophages. The same held good in the case of the liver and bone marrow and the condition might be described as an engorgement of the endothelial cells with the parasite. In the lung, testis, and kidney the "bodies" were seen lying in cells of an endothelial nature and closer investigation showed them in the endothelial cells of the finest capillaries. In the larger vessels around granulation tissue endothelial cells were seen containing from two to six "bodies" and in many of the still larger vessels cells crowded with "bodies" almost blocked the lumen. It was apparent, therefore, that they had in infection by the Leishman-Donovan bodies a type of infection in which the vascular endothelium was mainly implicated.

Dr. ALDO CASTELLANI submitted a paper entitled

Leishmania Donovani in Ceylon.

Dr. Castellani described a case in which the Leishman-Donovan [illegible] were found without the usual features of tropical splenomegaly being present. In Ceylon Dr. Castellani and Dr. Willey found in the splenic blood of rats infected with trypanosoma Lewisi structures very like the Leishman-Donovan bodies. Dr. Castellani considered it possible that the "body" was a parasite, in one of its stages of development, of the nucleus of the leucocytes—a leucocytozoon. He regarded the "bodies" as extra-corpuscular parasites of the red blood corpuscles.

Dr. LLEWELLYN P. PHILLIPS (Cairo) sent a

Note on the Occurrence of the Leishman-Donovan Parasite in Arabia and Egypt.

Dr. Phillips found the "bodies" in the splenic pulp of a Turk who had lived for a long time in Yemen in Arabia and in a man who had dwelt at Mecca. Arabia must therefore be added to the countries in which the Leishman-Donovan parasite occurred. In native Egyptians, also, Dr. Phillips had found the "bodies."

In the discussion which followed the papers upon the Leishman-Donovan bodies the following remarks were made.

Sir PATRICK MANSON warned medical men in tropical countries concerning the danger of indiscriminately puncturing the spleen in the search for Leishman-Donovan bodies. In the splenomegaly of leucocythæmia puncture of the spleen might be followed by disastrous hæmorrhage and he therefore urged careful blood examinations before splenic puncture was attempted. The presence in the disease connected with these bodies of ulceration, dysentery, or oriental sore suggested a mode of exit of the parasite. It might emerge through ulcerations and enter by insect bites. Oriental sore must now be regarded as a serious disease and sometimes leading to a general infection. He had seen a patient suffering from oriental sore subsequently develop disease of the testicle necessitating castration.

Colonel DAVID BRUCE stated that Captain Rogers's discovery of the development of Leishman's bodies into trypanosoma was a startling observation and if confirmed was highly important and it was difficult to see where a fallacy could have crept in. Colonel Bruce thought that the "bodies" ought to be known as the Leishman bodies as Leishman discovered these parasites and Donovan only confirmed the observation.

Dr. G. C. LOW (London School of Tropical Medicine) remarked that in experiments which he had made he failed to find that the parasites multiplied during incubation. At a temperature of 37° C. and room temperature the parasites entirely disappeared on the second day. In ringed fresh specimens also no changes in the parasites were found at the end of four days. The parasites were found in the macrophages or splenic cells of the spleen, in the secreting cells of the liver, in the marrow cells, and also apparently in some situations in the endothelial cells. It would be well were the "bodies" sought for in splenic anæmia. Dr. Low remarked that in view of Schaudinn's discovery of the change of an intra-corpuscular pigmented parasite (halteridium) into a trypanosome it would be well to consider the possibility of the Leishman-Donovan bodies having something to do with the resting stage of malaria. It was evident that the "bodies" existed over a vast area and were prevalent in many intensely malarial areas.

Colonel KENNETH MCLEOD, I.M.S. (retired), remarked that the hæmorrhages in Leishman disease were more pronounced than in kala-azar.

Dr. ALEXANDER CROMBIE, C.B. (London) said that pigmentation was common in cachexial fever and might be due possibly not to malaria, but to the presence of Leishman-Donovan bodies. Oriental or Scinde sores were common amongst camel-drivers and men who looked after camels. It was known that two species of trypanosoma infected camels, and it would appear that the animals infected the men who attended upon them. In districts where there were no camels there were no sores of the kind amongst men.

Mr. JONATHAN HUTCHINSON (London), Dr. J. W. W. STEPHENS (Liverpool), and Dr. LOUIS W. SAMBON also took part in the discussion.

Fleet-Surgeon P. W. BASSETT-SMITH, R.N. (lecturer on tropical medicine, Haslar), communicated a paper on

The Fungus of Tinea Imbricata.

This parasitic skin affection occurred in the Far East in the islands of the Malay Archipelago and recently it was observed in Brazil. From careful observations Fleet-Surgeon Bassett-Smith had come to the conclusion that the fungus of the disease could not be regarded as one of the trichophytons but as belonging to the aspergillus group of the perisporiacea. It differed, however, from the aspergilli in having two forms of generation: (1) by gonidia from the gonidiophores; and (2) by the development of oval spores direct from the mycelium cells The name lepidophyton (Tribondeau) should be retained for the fungus

Sir PATRICK MANSON observed that in attempts at the culture of the fungus of tinea imbricata the difficulty of obtaining scales free from fungus forms other than that in question should be borne in mind

Mr T J TONKIN (Yapton) read a paper entitled

Leprosy a Curable Disease

Mr Tonkin contended that leprosy was a disease not only markedly amenable in many of its grades to intelligent direction but one from which both with and without treatment recovery might take place At one time it was no doubt to the advantage of any community that leprosy should be regarded as an incurable ailment as thereby segregation was enforced and the only means of eradicating the disease believed in insisted upon At the present day, when knowledge was more advanced, to continue to call leprosy an incurable disease was unscientific and unnecessary to the welfare of an intelligent community There was no doubt the prevalent idea that leprosy was incurable prevented lepers coming for treatment during the early stages of the disease and thereby lessening the chances of cure It was important that the fact that leprosy was no longer regarded as an incurable disease should be made widely known and the responsibility lay with the medical profession to do so

Mr JONATHAN HUTCHINSON advocated the potency of chaulmoogra oil in the treatment of leprosy He exhibited photographs of one case in which chaulmoogra oil was given in moderate doses for nine months, the tubercular character of the skin had quite disappeared and to all appearances the patient was quite well Mr Hutchinson also related the case of a woman who recovered from leprosy and now, 25 years later, was healthy and well In Norway Danmelssen s cases relapsed when they left the asylum and went home again Mr Hutchinson ascribed the relapse to reverting to bad fish

Mr CANTLIE stated that within the past 12 months he had seen two cases of leprosy from South America In certain inland towns in South America south of the equator leprosy was prevalent in a very mild form The only signs and symptoms which appeared after, it might be, years of infection were numb patches on the legs, some whitening of the skin over the numb patch with a faint hyperæmic margin, some thickening of the nerve trunks leading to the patch, and loss of some of the hair of the eyebrows Mr Cantlie was convinced that there were many persons suffering from mild types of leprosy, showing numb patches on the lower extremity and loss of eyebrows,

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Dr CROMBIE said that it must never be forgotten in speaking of leprosy and its cure that there were two kinds of leprosy—the tubercular and anæsthetic, and that in the latter the chances of arresting the disease seemed occasionally to be possible

Mr CANTLIE read a paper upon

A Liver Abscess followed by an Abscess in the Upper Lobe of the Right Lung

The patient had been operated upon in India in the early part of 1904 for an abscess of the liver On the voyage home he got a return of fever and pains in the back He had no rigors but developed a cough with expectoration of matter resembling pus from a liver abscess On May 25th on searching the liver for pus nothing was found the needle striking the scarred tissue of what was once a liver abscess On the next day pus was found in the pleural cavity a large drainage tube being inserted As the temperature did not subside a large opening was made in the chest wall when the lung was seen to be collapsed and pus flowed into the cavity from somewhere high up in the thorax The exact origin of the pus was not found until after death, when it was seen that the upper and not the lower lobe of the right lung was the seat of abscess There was no connexion between the seat of the old liver abscess which was quite healed and the abscess in the upper part of the lung In cases of the kind Mr Cantlie suggested placing a ligature round the root of the lung and removing it

Sir PATRICK MANSON and Dr JOHN CATTO (London School of Tropical Medicine) described

A New Nematode

At a necropsy in Singapore on a Chinaman who died from cholera an abnormal condition of the liver, spleen, mesentery, large intestine, and bladder was observed On making microscopic sections of the diseased tissues oval, double walled bodies (ova) varying from 68μ to 70μ long and 34μ to 40μ broad were found The ova were in enormous numbers In the large intestine they lay beneath the peritoneum and in the mucosa embryos could be seen developing inside the oval bodies In an artery of the meso rectum a minute adult nematode was visible and a free embryo was seen in a blood vessel of a mesenteric gland The parasite would seem to be an oviparous nematode of minute dimensions and of unknown species

NAVY, ARMY, AND AMBULANCE

WEDNESDAY, JULY 27TH

Major E C FREEMAN, R A M C, read a paper entitled

Camp Sanitation

He said that camps in war time fell into two divisions temporary and standing The tendency nowadays was to replace temporary camps—that was those occupied for from *24 to 48 hours only—by bivouacs, doing away with tents* altogether when on the march Standing camps were congested areas The inhabitants were crowded in their tents to an extent never met with in civil life The medical authorities should be consulted on the choice of camp sites There was nothing to be said in favour of the bell tent and a ridge pole tent was now being introduced One important point was to secure, if possible, a decent source of water supply and to take every care to keep it *uncontaminated* A system of elevated cisterns could often be improvised thus doing away with the frequent movements of water carts A great point was to teach the cooks to put all the fragments of food and so on into empty tins and not to throw everything on the ground and to trust to sweeping it up afterwards *There was a curious* tendency to put the kitchens and latrines close together The medical officer must see that they were kept as far from each other as possible If the meat was killed at the camp *the slaughter place must be half a mile or so at least away* The pail system of latrines was much to be preferred, as trenches rapidly became filled up and fresh ones had to be dug thus continually extending the danger area Under the pail system the excreta were removed from the camp altogether Refuse from the tents should be collected daily and *should be placed in a deep refuse pit outside the* camp and set fire to Cleanliness in the matter of urinals was almost impossible to attain and they must trust to the hospital *authorities to treat* all enteric fever and suspicious cases with a course of urotropin as a matter of routine before discharging them Incinerators of various patterns had been proposed for camp rubbish and excreta but it was not probable that any at all would be allowed to form part of the already too great impedimenta of an army In the general hospitals where there was a daily output of specifically infected excreta a destructor was certainly required, but such elaborate machinery should not be necessary in a camp if its *conservancy* was properly looked after and filth was not allowed to accumulate A regiment with two water sterilising machines, a portable destructor and a load of fly preventing metallic latrine seats might be healthy but it would certainly cease to be mobile Sometimes for camps in peace time the space available was small and constantly in use, as at many rifle ranges and in artillery camps connected with coast batteries Those restricted sites required special precautions, otherwise the ground became foul without opportunity to recover itself and formed a nidus for pathogenic germs Those sites should be treated more as barracks than as camps, the latrines should be permanent structures with impermeable cement floors, and worked on the dry-earth pail system There should be a pipe water supply with fixed stand pipes and iron ash bins on concrete bases should be provided for refuse, so that there should be no excuse for fouling the ground A permanent ablution hut and a shelter for the kitchen were desirable with fixed drainage channels for the waste water Every officer should be taught the *elements of hygiene* and every quartermaster on appointment should go through a short course of instruction in sanitation at Aldershot or other of the great military centres.

Surgeon-Lieutenant-Colonel P. B. GILES, A.M.R. (Bletchley), communicated a paper on

Sanitation in Volunteer Camps and the Disposal of Refuse and Excreta.

He urged that a powerful factor against efficient sanitation in volunteer camps was tha [illegible] out the camp was left to the [illegible] the entire exclusion of the medical officer and so frequently the best sanitation was not secured. It was quite true that volunteer camps were only intended to be used for a short period by the various units camping, but as it so frequently happened that favourite localities were used year after year more or less all the summer and so became foul, and because the purpose of camping was to give practical instruction, it had always seemed to him that as the dangers of camp life to a great extent were the diseases that were preventable, the proper course would be to start with all the precautions that should be observed if the conditions were actual service against a foe. It should be a *sine quâ non* that all camps should be inspected and reported upon by a medical officer before being actually laid out. Any attempts to restrict and curtail the area of a camp were risky; cramping the area of a camp might not under other favourable conditions at once show anything unhealthy but experience went amply to prove that in all localities in which camps were formed and continued certain diseases would sooner or later occur. The illnesses peculiar to camp were *de facto* such as were common to those who lived in crowded and ill-ventilated localities, and the best way to prevent those diseases was to obtain the best ventilation, cleanliness, disposal of refuse, and disposal of excreta. One medical officer as sanitary medical officer for the whole period of camp should be detailed by which one system prevailed and one standard was adopted.

Surgeon-General C. McD. CUFFE, C.B., said that the whole question of sanitation in camps had been carefully considered in the regulations and the advice of the medical officers given to commanding officers if carefully followed would usually result in the prevention of sickness.

Brigade-Surgeon-Lieutenant-Colonel G. S. ELLISTON (Ipswich) said that in volunteer brigade camps tent bottoms or floors should be supplied to both officers and men. At present in the Eastern District that was not done even in wet seasons.

Colonel J. E. SQUIRE, R.A.M.C. (Volunteers), said that the principles and practice of hygiene and sanitation should be taught to the officers, non-commissioned officers, and men, for whose benefit sanitation was so carefully studied by the medical officers of the army.

Major T. C. MCCULLOCH, R.A.M.C., said that, so far as the medical service was concerned, a complete chain of sanitary responsibility existed. The principal medical officer of a force was attached to the staff of the general officer commanding-in-chief, to whom he was to give advice in reference to all subjects bearing on the health of the troops and, with the sanction of the general officer commanding, he issued such instructions as he might consider requisite for the guidance of commanding officers, medical officers, and others. In the same way principal medical officers of divisions and senior medical officers of brigades were the responsible sanitary advisers of the officers commanding divisions and brigades, while the chain was completed when it was stated that the medical officer attached to a regiment or other unit was the sanitary adviser of the officer commanding that regiment or unit. The regulations for the army medical services indicated the scope and aim of the sanitary duties which were directed to be carried out in connexion with troops in the field. Those regulations provided sanitary inspectors for the sites of camps and of buildings to be used as quarters, hospitals, or stables, examination into the sanitary condition of towns or villages about to be occupied and their neighbourhood, the care required in collecting, storing, purifying, and distributing water for drinking purposes, the position and regulation of latrines and slaughter-houses, the disposal of refuse, the burial of the dead, and the disposal of carcasses of animals. Daily sanitary inspections of camps were directed to be carried out. Recommendations were to be made, in writing if necessary, as to precautionary measures required for the prevention of disease. When any disease was unusually prevalent every effort was to be made to ascertain and, if possible, to remove the cause, and a daily report of the progress or decline of the disease was to be continued so long as it might be necessary to do so. Those regulations also laid down that the principal medical officer of the field force was to be kept fully informed of the state of health of the troops and of the sanitary conditions of camps and other occupied places. The sanitary responsibility of the medical officer was entirely advisory in character. It was the duty of the army medical service to detail the sanitary measures which should be adopted but it was the duty of general officers commanding and of the officers commanding the various units in the field to take the executive steps to have the measures recommended carried out. With regard, therefore, to Major Freeman's point that the medical officer was seldom consulted when sites for camps were being selected, Major McCulloch said it would be observed, from what he had already said, that the matter was one which the regulations laid down the medical officer was to be consulted about, and when that was not done it was his duty to represent the matter to the officer commanding the troops. In regard to the instruction of the regimental officer and the rank and file in the elements of sanitary knowledge he wished to state that such steps were being taken. Lectures to the cadets at Sandhurst and Woolwich who were to become their future officers were now regularly given, while a more advanced course of lectures in military hygiene to officers at the Staff College was also provided. Specialist sanitary officers had been appointed for duty in England and it was part of the duty of these officers to give special instruction in matters hygienic to officers, quartermasters, non-commissioned officers, and men.

Major T. D. F. DONEGAN, R.A.M.C., then contributed a paper on the

Duties of a Medical Officer with a Regimental Unit in the Field.

He advocated that more power should be given to senior medical officers in the field in regard to the distribution of medical officers under them. He detailed their duties in the field and commented on the equipment necessary for regimental units. He recommended a reduction in drugs and discussed the advisability of having these in "tabloid" form. He exposed the faults in the present field panniers and described an operating table for field use invented by himself. The advisability of having stationary general hospitals was then put forward by Major Donegan and he also urged that general hospitals with mobility and with ample transport should be provided. The equipment of field units should be divided into ordinary, reduced, and emergency scales. He then entered into a full explanation of the faults of the present "first field dressing" and proposed that it should be carried on bandolier instead of sewn in the jacket. In conclusion, he considered the question of the ambulance transport in the field and demonstrated the necessity for two varieties of ambulances. He emphasised the necessity of having ambulance transport in first instead of second line transport, because by that means all ambulance and medical equipment wagons would be under the orders of a medical officer.

Lieutenant-Colonel A. M. DAVIES, R.A.M.C., read a paper on

Sterilisation of Infective Discharges and Utensils on Field Service.

He observed that the only methods of dealing with infective discharges in the field that were likely to be carried out in practice were: (1) burial in either deep or shallow trenches; (2) disinfection by chemicals, then burial; (3) boiling, then burial; and (4) incineration. The first and second methods were not to be recommended if the third or fourth methods were practicable. He compared the third and fourth methods and concluded that in respect to (*a*) quantity of fuel required, (*b*) degree of usefulness or extent of applicability, and (*c*) ease and inoffensiveness of working, the advantage lay on the side of moist sterilisation, where fuel was available. Where fuel was scarce deep burial, after chemical disinfection, should be practised.

Major W. C. BEEVOR, C.M.G., communicated a paper on

The Recruiting Problem.

He pointed out the vital importance of soldiers receiving a training extending over many years and suggested that boys should be enlisted for the army on the same lines as for the navy and formed into cadet companies for each regiment, brigade of artillery, or corps. He said that the increased expenditure would be compensated by saving on the poor rates, Government schools, and so on, and by the general utility of cadet companies who would be available for many duties now performed by trained soldiers and civil contractors Parents were now frequently ruined by their boys being thrown on their hands at the age of 14, 15 and 16—postal boys, telegraph boys, &c —and would be only too glad to get them into cadet corps That class of boy would develop into the best soldier A cadet company should be a separate unit in each corps, as was the case with those of the Royal Artillery, and the lads should be trained and nurtured under special supervision As each member rose to a certain standard of efficiency he would be drafted into various posts—artificers, tailors shoemakers medical assistants grooms joiners plumbers, clerks, and so on A selection should be made for the various requirements of a corps from its cadets as they grew and became efficient The question of pay and allowances should be settled on the same lines as pertained to the trumpeters of the Royal Artillery The boys parents or guardians should be required to enter into a contract with the Government, just as they would when apprenticing a boy to a trade

Deputy Inspector General T J PRESTON, R N said that parents should consent to their boys enlisting at 14 years of age and subsequently, after 18 to 12 years continuous service

Surgeon General G J H EVATT C B, deprecated the flogging of boys in the navy

Surgeon Major G A HUTTON (Leamington) said that with regard to the remarks made by Surgeon General Evatt that the boys in the Royal Navy were subject to flogging he entirely disagreed If there were any ill treatment public opinion was such in their country that that would soon be remedied

Major R C LEVER A M D, thought that they should offer men the same inducements as in civil life—permanent employment

Mr G S POLE (Middlesbrough) said it seemed to be implied that the general civil authorities did not employ discharged sailors and soldiers but though trained to rules and regulations he found them peculiarly restive under discipline and they were unfortunately unsteady, frequently immoral, and broke leave He had found marines more satisfactory

Major BEEVOR said that Deputy Inspector General Preston s statement that the best men came from the neighbourhood of London confirmed the contention that young boys from the labouring classes would give them the best men

THURSDAY JULY 28TH

Colonel D BRUCE R A M C read a paper on

Malta Fever

He said that it was one of the most tedious and refractory of fevers lasting in some cases for years and giving rise in the naval and military forces in the Mediterranean to an amount of suffering inefficiency and waste which it was most painful to contemplate Little had been done for some years past to advance the knowledge of that fever but a determined effort was being made the Admiralty War Office and Colonial Government had joined forces and under the direction of the Royal Society a research into the nature of that disease was being prosecuted Staff Surgeon E A Shaw and Surgeon R T Gilmour of the Royal Navy Dr Zammit of the Board of Health Malta Major W H Horrocks and Captain Kennedy of the Royal Army Medical Corps and Dr Johnstone of the Local Government Board were all working at the subject The micrococcus Melitensis which was discovered in 1886 was undoubtedly the cause of the fever It was a difficult micro organism to work with on account of its minute size the slowness of its growth on artificial media and the difficulty of separating it from other bacteria Of its habitat outside the body little or nothing was known It had not up to the present time been found in outside nature unless placed there artificially As to the conditions under which it could lead a saprophytic life nothing was known It was known from the statements of Bassett-Smith that cultures kept at 22° C still retained vitality after 14 months, that it lived in milk for some three weeks and in tap water for three days only In ordinary sea water it appeared to die off almost immediately Bassett Smith stated that it could live in urine from three to five days, and Horrocks gave five or six days In a dried condition it retained its vitality for much longer periods and Horrocks had made the important observation that it could live in dust for at least 69 days and on dried fabrics for a longer period. It had not, however, been found up to the present in the air or dust of infected places but that point was receiving especial attention No light had as yet been thrown on the possibility of the micro-organism having under natural conditions hosts other than man but if goats which crowded the cities and villages of Malta could grow it in their bodies and pass it out in the urine a never failing supply of infection would be present The mode of entrance of the micrococcus Melitensis into man was a subject of which they were very ignorant Did the micrococcus gain entrance by the alimentary canal the lungs tonsils, mucous membrane of the nose or eye, or through the skin? Feeding experiments on monkeys carried out by Dr A E Wright and others had been invariably negative Nothing was known of the effect of inhaling dust containing the micrococcus Melitensis but experiments were going on at present There was one case of artificial inoculation in man in which the conjunctiva was said to have been the point of entrance The smallest quantity of the virus introduced under the skin would give rise to the disease as many accidental inoculations in the laboratory testified, and that brought up the question as to whether it was possible that the disease might be conveyed from the sick to the healthy by means of biting insects although, in his opinion, it was very unlikely that it was an insect borne disease Dalton Gilmour and Bassett Smith had all attempted to separate the micrococcus Melitensis but had failed to do so He was glad however to be able to report that he received a telegram from Malta a few days ago, signed by Major Horrocks and Captain Kennedy, saying 'Found 26 colonies micrococcus Melitensis from one third c c urine That was an important observation and might be considered in connexion with the retention of vitality for long periods of the micro organism Up to the present the micrococcus had not been isolated from the sputum the expired air the sweat or the intestinal contents Another mode of exit was from the blood by means of biting insects That the micrococcus existed in the blood had been shown by Gilmour and Shaw and by Dr Zammit Gilmour especially had worked at the point and had repeatedly isolated the micro organism from the blood But up to the present the evidence went to show that it was only found in very small numbers in the blood, according to Gilmour not more than one or two micro-organisms per cubic centimetre could be found

Fleet Surgeon P W BASSETT SMITH R N (Haslar), communicated a paper entitled

The Etiology of Mediterranean or Undulant Fever from a Naval Standpoint

He stated that he had been able during the last four years to study the disease from both its clinical and laboratory aspects owing to the large number of cases invalided to Haslar annually from the Mediterranean The deductions he made from those inquiries were (1) that Mediterranean fever showed no sign of decrease in its incidence in His Majesty s Navy on that station (2) that both officers and men suffered severely but that the percentage of young officers and men in early adult age was proportionately great (3) that all ships appeared to be affected equally according to the time spent by them at Malta harbour, the permanent harbour ships giving the most cases, (4) that it was very frequently the case that men contracted the fever while in Malta Hospital when admitted for other diseases and that the nursing staff in attendance on them there showed a tendency to develop the disease but whether that was due to its endemicity or to direct infection there was no proof, (5) that the greatest incidence of cases was during the months of May and June (6) that in the fleet there was no evidence of infection being received from the shore other than through the agency of wind carried germs, (7) that the organism could retain its vitality for a considerable period when desiccated but that it died in about five days in sterile fresh and sea water and in urine but remained active long in sterile milk, (8) that the organism was very virulent in laboratory cultures readily causing attacks when taken in by the mouth or through accidental inoculation (9) that the organism was present in the peripheral blood in all cases during the early stages and in severe pyrexial relapses and that in the afebrile intervals and following cachexia it was not demonstrable but that in no case was it very abundant, (10) that the disease might remain latent for several months and relapses might occur for a period of two years at least but that when once completely cured it gave an immunity from further attacks, and (11) that though infection by means of blood sucking insects was possible, the evidence would lead to the belief that in the presence of bad sanitation where the disease was endemic infection was probably conveyed in dust by winds mostly in the hot dry months following the rains, and that it gained access to the patient through some breach of surface, probably in the throat, and that, as a rule, when perfect health had been established after an attack of the fever, an immunity was acquired against further infection.

Professor S. GRECH said that as a general practitioner in Malta he was glad to make a few remarks. He protested strongly against the nomenclature—Malta fever; it might give to Malta a bad name which might keep away winter visitors. That same fever had been observed in Sicily, Naples, and all the other towns along the Mediterranean.

Major T. H. F. CLARKSON, R.A.M.C., and Deputy-Inspector-General PRESTON having spoken, Colonel D. BRUCE replied.

Fleet-Surgeon JOHN LLOYD-THOMAS, R.N. (Portsmouth), read a paper entitled

A Naval Surgeon's Notes.

He drew attention to some points which concerned the naval surgeon and were incidental to modern methods of big-gun firing at sea. He thought the ear suffered more damage from big-gun firing than any other part of the body. He briefly considered the part each section of it played in conveying air vibrations. If a typical case of ruptured membrana tympani were seen immediately after the accident from gun fire smart local pain was complained of and the auroscope revealed a minute fissure with red raw edges and a drop of blood at its lower end. If the ear were merely plugged with wool and boric powder, the patient being at the same time sheltered from further concussion, the drum healed by first intention. "Irreparable deafness," commonly called "gun deafness," was a condition regarding the pathology of which too little was known. It existed with or without any visible sign, such as rupture of the drum, and both sides of the head were generally equally affected. Tinnitus was a very common subjective symptom. The outer ear revealed nothing when the drum was intact. The Eustachian tube might be quite patent. The deafness varied in degree but was seldom, if ever, complete. It was to be regretted that up to the present no device had been found that would sufficiently protect the ear from the violent concussions caused by the modern gun. To protect the membrana tympani cotton-wool was useful as diminishing the violence of the air waves proceeding in its direction, and for some time a doughy substance had been largely used for plugging the external meatus and it was recommended to keep the mouth slightly open. Experiment showed that if the irregularities of the auricle were filled with wax or oil the intensity of sound was weakened, and he had advised vaseline to be tried for this purpose but with doubtful results. Nipple-shaped india-rubber plugs had been used. The direction of the meatus externus to the source of sound was material. If the side of the head was directly opposite to an explosion the ear would suffer a more violent concussion than if the full face were opposed to it. A gun's crew, however, were so variously disposed that no definite lines could be laid down for observance.

Surgeon-Major C. R. KILKELLY, C.M.G., followed with a paper on

The General Hospital in War: its Working and Staff.

War hospitals were of three kinds: the field, stationary, and general hospitals. A field hospital was essentially a mobile unit. Stationary hospitals were improvised constructions scarcely deserving the name of hospitals. They were of the nature of rest camps, detained wards, or converted field hospitals. General hospitals were established to receive all kinds of sick and wounded evacuated from field hospitals to treat and care for them in accordance with the latest and best methods of modern science. It was impossible to predict what kind of cases or in what numbers sick and wounded would be sent to a general hospital. It must therefore be capable of expansion in all its parts and capable of sorting and receiving the various groups of diseases in appropriate wards or specialised sections. Hospitals were often suddenly required at places where hitherto stationary hospitals had been established, owing to the outbreaks of epidemics, the formation of standing camps, or as a preliminary step to the formation of a general hospital, and a general hospital should be able to detach one or more complete sections for work at such places if within the region of its "sphere of influence." In order to combine efficiency with economy the model general hospital should be organised on about a 550-bed basis (500 beds for non-commissioned officers and men and 50 for officers), capable of being doubled or trebled in size, divided up into appropriate sections, and with a convalescent camp attached. In regard to equipment he had found the new pattern tortoise tent 20 by 24 and the Indian pattern E.P. tent the most suitable. The present hospital marquee was a most defective tent; it was heavy, of a bad shape, and easily blown down by a gale of wind. The equipment generally should be carefully selected and constructed in "standardised" patterns. The Red Cross committee could do useful work in that line by obtaining and exhibiting selected standardised patterns of equipment and arranging with firms to supply them at short notice. The equipment must include in an efficient general hospital a destructor for burning refuse and utilising the heat to generate steam in a boiler. The steam could then be utilised in a disinfector for disinfection by saturated steam under pressure and also in a turbine engine and dynamo for electric lighting, x-ray work, cooking, baths, and sterilising milk.

Dr. S. HAMILTON (Newport, Mon.) read a paper entitled

Is the Widespread Slight Training in Ambulance Work Beneficial to the Community or would it be better to make the Training more thorough at the Expense of Numbers?

In the course of his remarks he suggested that it should be an instruction to all examiners to make the examination more testing on the practical application of first aid; that those interested in ambulance work should be urged to organise divisions or corps of the St. John Ambulance Brigade in towns where none already existed (this would bring the certificate holders in these towns together for practice once a month and thus keep them efficient); that the St. John Ambulance medallion should be given only to those certificate holders who afterwards joined the brigade and passed the annual examination—the service badge and the service medal of the St. John Ambulance Brigade should be continued under the regulations at present in force; and that factory owners and large employers of labour in towns where ambulance classes were held should be invited to offer challenge cups for annual competition which would be a great stimulus to the various ambulance teams to keep in training.

Mr. POPE thought in regard to ambulance work that the chief defect of the system was the laxity of the examiners who did not carry out the practical part of the examination thoroughly and who passed candidates too easily.

Dr. C. H. MILBURN (late Deputy Commissioner of the St. John Ambulance Brigade) thought that wherever a general hospital and a brigade unit existed in the same town opportunities should be provided for giving the ambulance men, under proper control, instruction and practice in systematised general nursing and orderly work. On the question of giving a large number of men a slight knowledge of first aid or a smaller number a more thorough training and education in ambulance work he thought that every recruit on joining the services should receive some first-aid instruction but that the men of the Royal Army Medical Corps should have the most thorough and extensive education possible.

Deputy-Inspector-General PRESTON said that the St. John Ambulance Brigade men were more efficient than Association men as they kept up their work and were qualified in nursing. The Admiralty had at present preferred Brigade men as being better trained.

FRIDAY, JULY 29TH.

Staff-Surgeon F. H. A. CLAYTON, R.N., sent a paper on

The Organisation of the Treatment of Syphilis in the Navy.

He suggested that men who had contracted syphilis should have the consequences of their misfortune impressed upon them by giving them a small pamphlet of advice, and by proper care of the teeth and so on should so far as possible be prepared both for combating the disease and for preventing any ill-effects of mercury; that their attendance for observation and treatment should be made part of routine both in ships and shore establishments and proper records of attendance kept; and that such records should include the dates and nature of symptoms and treatment and any other points of value in order that, to insure continuity, the requisite information might be sent with the patient on transfer to another ship.

Colonel SQUIRE contributed a paper on

The Organisation during Peace of Civil Medical and Ambulance Aid to insure an immediate Reserve of Trained Assistance on the Outbreak of War

He said that in a war of any magnitude it was necessary to supplement the military organisation for the care of the sick and wounded by civilian aid Such aid was essentially of two kinds—surgeons nurses and orderlies receiving pay through the War Office and *personnel* and stores provided by voluntary subscription Voluntary aid might be wasteful if no regulations for its employment had been previously laid down Organisation during peace was essential to insure the best provision in war The Central British Red Cross Committee had been instituted as the organising body for civilian aid with troops in war Surgeons and nurses adequately trained in their professional work were to be obtained in sufficient numbers to allow of selection but in order to obtain at short notice the best professional aid selection must have been made previously A list should therefore be kept at the War Office of suitable persons willing to serve if required A roll of men willing to serve as orderlies might be kept in the same way, the special qualifications of each being entered against his name Conditions of service and a scale of pay for the various duties should be laid down For the *personnel* serving under some authorised voluntary aid society or committee the conditions of service and rates of pay would be drawn up by the body engaging their services but would have to come within the terms of requirements previously formulated by the Central Red Cross Committee and communicated to the body offering aid Hospital equipment surgical stores, medicines and so on were needed in war greatly in excess of peace requirements Many of these were perishable and could not with advantage be kept in store By previous arrangement with large firms almost everything needed could be procured as required What was necessary was a list kept at the War Office of firms able and willing to supply materials The supply of comforts both for the troops in the field and for patients in hospitals came within the scope of voluntary, aid A list of articles which would be especially acceptable should be drawn up and sent to all applicants at the beginning of a campaign The organisation of that department and the storage and distribution of those

organised equipped and maintained by voluntary subscriptions under regulations to be drawn up previously by the Central Red Cross Committee Voluntary efforts should also provide assistance to the sick and wounded whilst journeying along the lines of communication and on arrival at the base or at home Accommodation at suitable places should be arranged for convalescents at home All those matters required carefully arranging and organising beforehand and it was essentially the duty of the permanent voluntary aid societies—such as the Red Cross Society—to perfect such organisation during peace It was desirable that there should be some organisatioi
country, by means of which
a war broke out could at oi
central body which was in
War Office These local committees should be permanently established under some central organisation—preferably not connected with the War Office—with its head office in London As the basis on which to build up the organisation that was required they had the British Red Cross Society (British National Society for Aid to the Sick and Wounded in War) the St John Ambulance Association the St Andrew Ambulance Association various nursing associations and, since 1898 the British Central Red Cross Committee The British Red Cross Society, founded during the Franco Prussian war in 1870 hibernated during periods of peace and only woke to activity when a war broke out, instead of spending the leisure time of peace in organising for war The St John Ambulance Association, primarily originated to provide instruction in first aid treatment in case of accidents in civil life had comparatively recently considered the possibility of providing supplementary aid to the troops during war, but when the South African war commenced it had made no provision for training in the duties required by orderlies and nurses for military service Nevertheless the association was able to furnish a large number of willing, though imperfectly trained, men to the army in South Africa The St John Ambulance Association was now officially recognised by the Central Red Cross Committee as a body from which hospital *personnel* could be obtained during war Where the present machinery for the organisation of civilian aid seemed to be faulty was in the chain of connexion between the War Office on the one hand and the public which supplied the *personnel* service money, and gifts which the War Office would utilise in war on the other The Red Cross Society and the various ambulance associations were private organisations independent of the State machinery The public had not always been in exact accord with *army methods of organisation and might possibly* be more disposed to send money and gifts to the troops through some organisation outside the army than through a committee directly connected with the War Office The representation of certain organisations (Red Cross Society and St John Ambulance Association) on the Central Red Cross Committee seemed
should be avoided
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members—should
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voluntary aid could be accepted by the army but leaving it to a voluntary society to organise and provide the aid The committee of that society would be the one and only means of communication between the various voluntary aid societies and individuals offering aid and the War Office When war broke out the officials at the War Office, who had their hands full with the work of mobilisation and all that that entailed, would not then have its time occupied with the various suggestions and offers of help of the different societies &c, but would be relieved of that by the committee The British Red Cross Society seemed to be the body which should *organise the voluntary aid during peace and it should establish* local centres throughout the country In war time it might well carry out the duties allocated to it by the Central Red Cross Committee in its present regulations one of the most important of those duties being the collecting and distributing of funds The main thing required at the present time was the organisation of local committees throughout the empire by means of which individuals and societies offering help in time of war might be brought into touch with the Central Red Cross Committee representing the army The Central Red Cross Committee was considering the matter But the Central Red Cross Committee was not the best body to undertake the work it should be in communication with one other committee only not with many which would multiply its work and correspondence when war broke out A single buffer committee purely civilian, should stand between the Central Red Cross Committee and local committees or individuals The proper body to take that important position was obviously the British Red Cross Society The British Medical Association, with its branches all over the empire might well serve as a means of forming a truly Imperial Red Cross Society Through the British Medical Association it would be possible to find a medical man in
India an
for his
organising committee in London would bring all into touch and with *representatives of the National Aid Society* St John Ambulance Association, and similar bodies would form the direct communication with the Central Red Cross Committee The latter committee would decide upon the requirements it would be for the new committee (Imperial Red Cross Committee) to see that those were forthcoming when needed

Major FREEMAN said that having had the honour of being registrar of a general hospital for 17 months in South Africa where *their whole staff except 20 men consisted of* volunteers and St John Ambulance Brigade men, he was very glad to have an opportunity of paying a tribute in that section to the conduct of those men in the field, they worked quietly and unostentatiously, and died, too in the cause of humanity during those months of pestilence in Bloemfontein, and their work had received scant public recognition The volunteers were the most useful because they stayed with them all through the campaign The St John's men were perhaps better trained but they stayed too short a time

Major McCULLOCH said that urgent need existed for a thorough organisation of the voluntary aid resources of the have the only certainties which life affords. By the aid of these certainties eclipses are predicted and ADAMS and LE VERRIER were enabled to announce the existence, and to discover the position, of the previously unknown planet Neptune. The changes of view discussed by Mr. BALFOUR have no reference to phenomena but only to the conditions of the matter through which phenomena are displayed, and they have at present absolutely no bearing upon the practical conduct of life. They neither strengthen nor weaken the case against the departmental officials responsible for the equipment of our troops, and they must not be employed as furnishing an argument against the utility and applicability of science in man's dealings with his environment. It is this homely and practical aspect of the case which the Guild must endeavour to force upon the attention of the public, and it is neglect of this aspect which has been the cause of incalculable sickness and mortality, of innumerable failures afterwards retrieved, if at all, only by prodigality of treasure and of life.

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The Metropolitan Hospital Sunday Fund Collection.

THE report of the distribution committee of the Metropolitan Hospital Sunday Fund for 1904 and the discussion which followed its presentation at the meeting on August 9th raise several questions of great social and medical importance. There has been a marked tendency in late years for the Fund to increase. The public, led so earnestly by His Majesty the KING, by an unfailing succession of sympathetic Lord Mayors of London, and by constant efforts on the part of the various ministers of religion, have been aroused to a deepening sense of responsibility. It is only right, too, to say that the energy of the secretary of the Fund and his inventiveness in devising new forms of appeal have contributed not a little to the growth of the Fund; nor must Mr. HERRING'S splendid generosity be forgotten. It is painful, therefore, and a little surprising to have to notice for 1904 a falling off of £2000 in the amount to be distributed, and to think that this means so many hundreds a year less to the numerous hospitals and dispensaries by which the benevolence of the public to the sick and wounded poor is administered. There should be much searching of heart among the different sections of the community as to the blame for such a falling off. There is a ready and offhand excuse—we have heard it—"Times are bad, trade is depressed, dividends are low, property is depreciated." Such statements cannot be contradicted, but they are entirely inadequate as an excuse for pinching and starving the hospitals. There is a time to make money and there is a time to spend it. It is the advantage of a country like this that there is always a reserve of wealth practically unaffected by the fluctuations of trade; whole classes of our population are conscious of little or no abatement in their luxuries. It is not to these classes alone that we must look for the better support of our hospitals, and some speakers at the Mansion House thought that the strength of the Fund lay in the support of all classes. But it takes a GUY to make a Guy's Hospital. Very little imagination will show that the poorer classes cannot do much for the maintenance of our great hospitals and that the gold for this must mainly come, and should come, from accumulated wealth—from men with reserves. We have a faith in the generosity of rich men which leads us to believe that if only they can be assured that our hospitals are well and carefully administered they would out of their abundance adjust the adverse balances that so harass those who have to find the ways and means to keep hospitals open. Heaven forbid that we should seem to belittle small contributions. As has been pointed out more than once in our annual supplement a voluntary rate of one halfpenny paid by the metropolitan public would at once more than double the amount of the Fund. But this universal feeling of indebtedness to our great charities is not in the least likely to take place, and for practical purposes it seems that we must look expectantly to individual efforts.

The attention of the councils of the great hospital funds—King Edward's Hospital Fund for London and that of the Metropolitan Hospital Sunday Fund—has been much given of late towards the double end of making hospitals efficient and of moderating the rate of their expenditure. The distribution committee of the Metropolitan Hospital Sunday Fund, in the report for 1903, said that "its special attention had been directed to the constantly increasing expenditure of hospitals in the maintenance of patients," and showed how this expenditure in ten years had increased in 21 of the principal hospitals at the rate of *4s. 3½d.* per week per occupied bed. The committee reverts to the subject in its recent report and shows that it is as determined to compel economy in hospitals as to urge liberality on the contributing public. Happily, it is already able to report that after conferences with some of these hospitals considerable reduction of expenditure has been effected. It is only fair to say that the rate of expenditure of our general hospitals in point of economy will bear a favourable comparison with that of those hospitals which have the deep pocket of the State to rely on for their support. This is well shown in the very interesting report of the managers of the Metropolitan Asylums Board for 1903. Enteric fever is one of the most expensive diseases treated in general hospitals, but it appears that the cost of treating such patients in the hospitals of the Board compares unfavourably with the cost for the same public service incurred by the general hospitals which are maintained by voluntary subscriptions. The council of the Metropolitan Hospital Sunday Fund has made rules which are meant to reduce the abuse of the out-patient department and which have had some success. There is still room, however, for much more care in the work of this department. A glance at the admirable statistics of the Fund will show that there is great variation in the different hospitals in this respect, some expending only 1*s.* 6*d.* per head on each out-patient, others, as the Cancer Hospital, spending 30*s.* But a more important point in genuine economy than cutting down the expenditure per head in the treatment of out-patients is the efficiency of means used for the exclusion of persons who have no claim on the charity of the public. The Metropolitan Hospital Sunday Fund will do well to use its influence to curtail the proportions of the overgrown out-patient departments of hospital work, especially in the way of discouraging expenditure on huge building operations and the admission wholesale of unfit persons. The out-patient departments of our hospitals ought to be reserved strictly for the sick and injured poor. The work of the general practitioner should not be discharged there gratuitously to the benefit of well-to-do people.

Not altogether unconnected with the question of economy is the action of the Metropolitan Hospital Sunday Fund in withholding its grant for this year to the City Orthopædic Hospital, Hatton Garden, which in point of mere numbers is more important than the other orthopædic hospitals with which amalgamation is being recommended. On general principles the authorities charged with the distribution of the Fund deprecate the multiplication of special institutions. The premises of the hospital are not model ones for hospital purposes and are not situated in a locality favourable for the pure air and light treatment of a set of cases which peculiarly need such advantage. There is much to be said for one large metropolitan orthopædic hospital, with a country branch to which suitable cases could be sent. But the withdrawal of the grant from the City Orthopædic Hospital, against the management and financial conduct of which not a word has been said as far as we know, has necessarily caused much pain, while the letter which we print in another column from Mr. J. A. Phillips makes out a good case for the institution. We know what pains the distribution committee takes in respect of the awards, and feel that criticism may seem ungracious towards its delicate work, but we have come to the conclusion that, at any rate temporarily, the City Orthopædic Hospital should have received a grant.

The Physiological Aspect of the Administration of Chloroform.

In the Section of Physiology at the British Medical Association, a most interesting debate upon the subject of chloroform anæsthesia was introduced by Sir Victor Horsley, and a short record of the views of the many well-known speakers was published by us last week. We hear from various sides, and not infrequently, that the employment of chloroform as an anæsthetic is destined to diminish, though some practical anæsthetists do not hold this view. Chloroform as an anæsthetic has certainly earned the unenviable reputation of being "dangerous," yet there are many with a right to be heard who assert that not only is chloroform the most effective anæsthetic but that attention to certain rules can minimise the dangers of its administration to vanishing point. Whether or no its administration is becoming less and less resorted to, it is undoubtedly true that never have the administration and action of the drug been more rigorously subjected to investigation than at the present time. The task set before the anæsthetist when he is required to produce deep anæsthesia with chloroform is one more difficult than those who set him the task seem sometimes to picture to themselves. The channel along which the administrator of chloroform is asked to steer the life of the patient is a very narrow one. He has to employ a powerful poison which acts upon all the nerve cells of the brain and spinal cord, and at the same time the nerve cells of the respiratory centre and the nuclei of the inspiratory muscles have to be safeguarded. This is, at any rate, the physiological theory, and physiologists premise that the chemistry of nerve cells differs from cell group to cell group. If sleep is held to furnish a rough example of what is required in chloroform anæsthesia, the distinction which the chloroformist is required to observe with his drug between the respiratory nerve cells and the rest of the nervous system is one that, were it not safely accomplished over and over again, might seem impossible from *a priori* considerations. For chloroform narcosis differs from sleep in this, chloroform is a "protoplasmic poison" potent to destroy life in every kind of living cell.

Assuming that the selective effect required in surgical anæsthesia is only a particular depth in a steep gradient of chloroform depression the lowest stage of which is death, it would follow that safety lies in perfect grading of the dosage. But not only is dosage in the administration of chloroform a very different thing from the simple dosage of a drug introduced by ordinary methods into the bulk of the body, but practical anæsthetists are not agreed that the solution of the matter lies entirely in the question of dosage. The first essential for accurate grading of the dosage is thorough knowledge and control of the percentage of chloroform vapour in the inspired air combined with normal freedom of expiration. These requirements are met, it is claimed, by an inhaler recently devised by Mr. Vernon Harcourt, the distinguished chemist, which delivers to the patient a percentage vapour of chloroform in air, the maximum tension of which is 2 per cent. It is claimed that in ordinary circumstances this concentration of the vapour suffices for surgical anæsthesia. The induction of the narcosis may then be slow but that need not be a danger, for it has recently been suggested by experiments upon the isolated heart with certain artificial circulating fluids, that the mode of action of chloroform is not cumulative. Depression of the heart beat is a salient effect of chloroform action when the drug is "pushed." Whether this is due to a direct action on the muscle or on the network of nerves in the heart wall is not at present clear. The fact remains that the heart's activity is easily depressed by chloroform. Yet, even when the action has been pushed to extinction of the beat and maintained at that point for half an hour at a time, the experiments of Professor Sherrington and Miss Sowton show that, on allowing fresh blood in place of that containing the chloroform to flow through the coronary vessels, the beat in a few seconds reappears and in a few seconds more regains its unimpaired activity completely. The cardiac danger, therefore, in chloroform narcosis, though grave, offers the favourable feature that mere continuance of the depression does not aggravate it, at any rate when low percentages are being dealt with. Mr. Vernon Harcourt's inhaler, however, though so ingenious and so highly commended by many observers, has not escaped criticism from the mechanical point of view.

An interesting paper by Professor B. Moore and Dr. H. E.

ROAF was read to the Section of Physiology as a contribution to the debate. These observers propound the thesis that chloroform combines with proteid radicles of living matter in a compound which is readily dissociable. Finding, as others before them, that chloroform is absorbed by blood in larger measure than by water or saline solutions they have devised a method of reading directly the pressures it exerts in the two fluids. They find that the tension exerted by a given quantity of chloroform in blood is less than its tension when dissolved in water or physiological saline solution. They urge that it combines with the blood proteids. This view is in antagonism to the view of Professor OVERTON, who refers the predominance of nerve effects in chloroform action to the high solubility of the drug in fatty compounds, such as the lecithin of nerve fibres. But these fats are not the immediately active part of the nervous mechanism and it is difficult to see how on OVERTON'S views the immediateness of the action of the drug, both in regard to onset and recovery, can be explained. On the other hand, the view of the production of an easily dissociable combination between chloroform and forms of proteid agrees well with a fact taught by the work of SHERRINGTON and SOWTON. When administered in blood instead of physiological saline solution the amount of chloroform which can be given to the heart without depressing its action is increased twelve-fold. It may be that the capriciousness of action which seems at present to attach to chloroform, as to so many of the drugs of which we are compelled to make daily use, will through patient inquiry be traced to sources controllable by practical means. If so we shall certainly witness a return to wider confidence in the employment of an effective and convenient anæsthetic.

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The Hospital Isolation of Scarlet Fever.

THE desirability of isolating certain forms of communicable disease has been in some degree recognised almost ever since the dawn of history, and within the last 40 years the practice has undergone such extension that some members of the medical profession are now asking whether it is not being carried too far. Great variations, of course, exist in the conditions which have to be provided for. Enteric fever and small-pox, for instance, are comparatively rare in children, while scarlet fever, measles, and whooping-cough are comparatively rare in adults. Enteric fever invariably requires prolonged confinement to bed and attentive nursing. Small-pox may be rendered so mild by previous vaccination that the eruption is limited to three or four tiny pustules and the patient does not feel himself to be unfitted to follow his ordinary employment for more than a day or two, whereas on the other hand hardly any patient can be more helpless or more in need of careful nursing than one suffering from the confluent form of the disease. The necessity of hospital accommodation for enteric fever and small-pox may therefore be regarded as unquestionable. Exceptional diseases have also sometimes to be provided for. We believe that the Metropolitan Asylums Board commenced its hospital work with the acquisition of a site at Hampstead and the erection of temporary wards in 1869 for the treatment of relapsing fever, a disease which has not been seen in this country since 1873. In London diphtheria did not attain considerable proportions till within the last 20 years and during the same period typhus fever, which was formerly prevalent, has disappeared. Measles and whooping-cough, though productive of a considerable mortality, have never been treated in hospitals on an extensive scale. It is mostly with regard to the isolation of cases of scarlet fever in special hospitals that a diversity of opinion exists among medical practitioners.

At the Congress of the Royal Institute of Public Health held at Folkestone last month a discussion on this subject was opened by Dr. C. KILLICK MILLARD, medical officer of health of Leicester, and a number of medical officers of health took part in the proceedings. This phase of sanitation has during the past eight or nine months received considerable attention. The utility of isolation hospitals was questioned in our columns some five years ago by Mr. E. D. MARRIOTT of Nottingham, but few medical men supported him in a contention which seemed to imply that isolation hospitals were valueless in the case of all infectious diseases. In 1901 Dr. MILLARD read a statistical paper before the Incorporated Society of Medical Officers of Health on "The Influence of Hospital Isolation in Scarlet Fever." On this occasion the following motion was proposed: "That as the hospital isolation of scarlet fever has now been tried for a number of years the time has arrived when a full inquiry into the subject is desirable." The meeting, however, declined to vote on the motion. The same writer read a paper six months later at a Congress of the Royal Institute of Public Health held at Folkestone and a similar motion to the above was defeated by 70 votes to 40. After this the question remained in abeyance until October, 1903, when Dr. A. MEARNS FRASER, medical officer of health of Portsmouth, chose the subject for his presidential address to the Southern Branch of the Incorporated Society of Medical Officers of Health under the title of "Is the Hospital Isolation of Scarlet Fever worth while?" Subsequently, both in our own columns and in those of other medical journals, the question has been freely debated, and after discussion at the recent Folkestone Congress the following motion was carried by 36 votes to 20: "That as the hospital isolation of scarlet fever has now been tried on a large scale for a number of years, and as some doubt exists as to whether the results obtained are commensurate with the cost, it is desirable in the public interest that a full and authoritative inquiry into the subject should be held."

So far as we can gather, the main arguments advanced by the opponents of the system are (1) that no town which isolates habitually a very large percentage of its cases of scarlet fever in hospital can show any greater diminution in the attack rate of scarlet fever than those towns which isolate very few or none of their scarlet fever cases; (2) that isolation in hospital does not prevent the spread of the disease, inasmuch as it is recognised that, in spite of the greatest care, cases discharged from isolation hospitals, to all appearance free from infection, frequently spread the disease on their return home; (3) that as regards the patient himself he has in most cases as good, if not a better, chance of making a recovery at home as in hospital, and (4) that the type of scarlet fever at present in this country is a mild one with a very slight mortality, the mildness of type having arisen quite independently of hospital treatment. The isolation method of dealing with scarlet fever has, however, very competent and strenuous defenders who make out a good case in its favour on medical and statistical grounds. In particular the upholders of hospital treatment combat the idea that cases can be as well looked after in the average home as in a special hospital. There is in the isolation hospital a small risk of contracting other specific diseases, but this is the only point where hospital treatment seems at fault in comparison with treatment at home. The issues raised are complex, but we think that a case is made out for inquiry, and hope that that inquiry, if instituted, will be conducted without any introduction of personalities.

Annotations.

"Ne quid nimis."

THE NEW SYDENHAM SOCIETY.

THE forty-sixth annual meeting of this society was held in Oxford on Friday, July 29th. The President, Professor William Osler, presided and there was a large attendance of members. The honorary secretary read the report of the council and submitted the balance sheet and proposed list of officers for the ensuing year. The officers were elected by ballot, Professor Osler being elected president, Mr. Henry Power treasurer, and Mr. Jonathan Hutchinson honorary secretary. The adoption of the report was carried unanimously and among matters mentioned therein was an interesting statement regarding the Clinical Atlas now in course of publication by the society. The council had suggested that the issue of the Clinical Atlas should be prolonged indefinitely and at least four fasciculi are to be published in every year. The report stated that it would be the endeavour of the editors to make each fasciculus and, as far as possible, each plate complete in itself, but it was not to be considered that any of the subjects illustrated were finally dismissed or considered complete. As regards the publication of printed volumes it was hoped that in addition to the four fasciculi a year the funds may soon afford the publication of a printed volume yearly. These volumes would be devoted to collections of the most important monographs recently published, especially selecting such as dealt with topics which had been published in the atlas. The council further stated that a considerable increase in the members' list would enable the publication of the atlas to proceed much more rapidly. Professor Osler said that he regarded with great satisfaction the proposal that the issue of the Clinical Atlas should be prolonged indefinitely, for he felt that this work would prove of the utmost value to all engaged in the practice of our profession both at home and abroad. We can cordially endorse Dr. Osler's words, for the value of the works published both by the Old and the New Sydenham Society is inestimable to members of the medical profession. We can only hope that the desire of the council for an increase of membership will be realised.

THE SOUTH AFRICAN MEDICAL CONGRESS.

THE South African Medical Congress will be held at Pietermaritzburg, Natal, in June, 1905, under the auspices of the Natal branch of the British Medical Association. The preliminary arrangements are nearly complete. A large general committee has been formed with two subcommittees—(a) financial and social, and (b) sectional. The work of the congress will be split up into the following sections: (1) Subjects of General Interest; (2) Medicine; (3) Surgery; (4) Gynæcology and Obstetrics; (5) Public Health; and (6) Special. The list of office bearers is not yet settled but the following offices have been filled: President of the Congress: Dr. James Hyslop, D.S.O., Lieutenant-Colonel, Natal Medical Corps, superintendent of the Natal Government Asylum, Pietermaritzburg. Vice-President of the Congress: Dr. Samuel G. Campbell, Durban. Joint general secretaries: Dr. D. Campbell Watt, Pietermaritzburg, and Dr. W. Watkins Pitchford, Government Laboratory, Pietermaritzburg. Treasurer: Dr. W. Russell Strapp, Pietermaritzburg. Secretaries of sections (all resident in Pietermaritzburg):—General subjects, Dr. A. I. Fraser; Medicine, Mr. H. N. R. Child; Surgery, Dr. W. J. Woods; Gynæcology and Obstetrics, Mr. H. S. Flook; Public Health, Dr. O. J. Currie; and Special, Dr. R. A. Buntine. Personal invitations will be issued to all medical men in British South Africa, and those who desire to read papers are asked to communicate with the sectional secretaries. The presence at the congress of medical visitors to South Africa will be highly esteemed.

IN THE MATTER OF PATENT MEDICINES.

WE have received a long letter from a correspondent who has read with disapproval our article in THE LANCET of July 9th, p. 98, which bore this title and referred to the question of protecting proprietary medicines by letters patent. Our correspondent claims to have obtained this protection for a "powder" which he advertises as "a remedy against deranged stomach, cold in the stomach (acute or chronic), diarrhœa, dysentery, cholerine, cholera, and all other diseases consisting in and caused by fermentation or putrefactive processes in the stomach and in the intestines, further, against defectibility of blood formations and morbifically altered condition of the blood (infectious diseases) such as typhus, pneumonia, consumption, &c." Our correspondent considers that "the infringement of letters patent rights by men who cannot at least prove its invalidity is a mean fraud," and that the medical man who gives a prescription identical with the patented article is "counterfeiting the patented remedy." He adds: "You don't consider, as it seems to me, that the patient himself can be very well in the position to make his own observations and reflections on his sickness and to make on his own body experiments which lead him to such a discovery especially if the remedies of physicians did not have any result and if the patient possesses some knowledge of chemistry." We omit the details given of the composition of the particular remedy under discussion and for the sake of argument we assume that the statements which we have quoted are literally true. Even then, however, we cannot agree with our correspondent's opinions and prefer to adhere to our own. We regard the making of experiments upon their own bodies by patients as highly undesirable, whether they are made with "patent medicines" or otherwise. We consider that if medical science can discover new drugs and uses for them, or for old ones, of benefit to those suffering from disease, it is contrary to public policy and to the interests of suffering men and women that any monopoly in such drugs or their uses should exist for the pecuniary benefit of individuals. The Patent Acts do not contain anything forbidding such a monopoly but, fortunately, there are practical difficulties in the way of its creation and maintenance. The person who registers any invention in order to secure patent rights for it does so at his own risk, and the Patent Office neither knows nor cares whether his invention is a novelty such as would be a fit subject of a patent or not. As a matter of fact a few medicinal compounds are "patented" every year, but in the majority of cases a device or title is chosen which can be registered as a trade-mark and nostrums are advertised under and become associated with it. Other persons can thus be restrained from passing off their goods by means of any imitation of the trade-mark or "make up" which has become known to buyers as distinguishing goods of a particular kind. The supposed protection of a formula so that it may not be used by a medical man in prescribing for his patients is a bogey which, as a rule, may be disregarded. If a practitioner's medical knowledge informs him that a certain combination will be of use to his patient he need not be deterred from prescribing it by the fact that another person claims an exclusive right to manufacture it. Among the practical difficulties which, we are glad to say, exist to prevent monopolies in medicinal compounds are others besides the question of the validity of the patent rights. We would ask any who claim such rights against whom they would proceed for a supposed infringement of them. Would they sue the medical man who prescribed the medicine, the druggist who compounded it, or the patient who purchased and took it? Supposing that they could prove their facts, a matter of some difficulty, what remedy would satisfy them? Would they claim damages or an injunction? Would they ask for an account of profits or for what? And lastly, what good would any of these be to them?

THE CHAIR OF PATHOLOGY IN THE UNIVERSITY OF MANCHESTER.

THE University of Manchester has taken many important steps in the arrangement and selection of its professorial staffs. The great subject of chemistry is now represented by two professors—not to speak of many lecturers—one for inorganic and the other for organic chemistry. The subject of pathology also now calls for two professors. Formerly this subject was ably taught by Professor J. Dreschfeld, now professor of medicine. In 1891 the chair was endowed by the Proter trustees and Dr. Sheridan Delépine was appointed professor. During these 13 years the subject has grown not only in importance but extent. Bacteriology has developed at an ever-increasing rate, both in its relations to medicine and public health as well as in relation to the prevention of disease. Besides carrying on the work of the pathological department proper Professor Delépine devoted much energy to the foundation and advancement of a school of public health. Now, and for some years past, there has been a separate laboratory of public health under the direction of Professor Delépine, and in October next it is hoped to open an entirely new laboratory which, at a cost of about £10,000, is being erected on a site near to where the new Royal Infirmary will be erected. It thus became evident that some rearrangement of duties should be made for the staff of the pathological department. About a year ago the council of the then Owens College appointed Professor Delépine Proter professor of comparative pathology and bacteriology. This left the chair of pathology and pathological anatomy vacant. After full deliberation the council of the University appointed Professor J. Lorrain Smith, Musgrave professor of pathology in Queen's College, Belfast, to fill the chair of pathology and pathological anatomy. Professor Lorrain Smith was appointed lecturer on pathology in Queen's College about ten years ago and professor in 1901, when the lectureship was raised to a professorship owing to its endowment by the late Sir James Musgrave. Professor Lorrain Smith is a graduate in medicine of the University of Edinburgh; and has been John Lucas Walker student in pathology in the University of Cambridge. To his pathological experience he adds a requirement of great importance—that of having acted as a resident physician in a large hospital, the Royal Infirmary of Edinburgh. Professor Lorrain Smith's original contributions to certain departments of the borderland between physiology and pathology are well known. He has worked on the effects of thyroidectomy, the oxygen-tension of blood in health and disease, the effects of air vitiated by respiration, the oxygen capacity of the blood in anæmia, and on more purely pathological questions in connexion with typhoid fever. We congratulate the University of Manchester in thus providing liberally for the prosecution of pathology in all its branches and applications.

THE WORK OF THE GOVERNMENT LABORATORY.

THE report of Dr. T. E. Thorpe, the principal chemist of the Government laboratory, upon the work of the laboratory for the year ending March 31st, 1904, shows an increased activity on the part of this important department of public administration. Originally founded to watch over the interest of the country's revenue departments the work of the Government laboratory now includes a supervision over many commodities supplied to Government departments and provides a means of control over the work of public analysts. The total number of analyses and examinations made in the laboratory in Clement's Inn-passage during the past official year was no less than 85,305. By far the greater number of analyses referred to substances coming under the surveillance of the Revenue department, while some 6000 analyses were made for the Board of Agriculture, the Local Government Board, the India Office, the War Office, and other Government departments. Lastly, 109 samples were referred to the Government laboratory by magistrates under the terms of the Sale of Food and Drugs Acts. There are some curious instances in the report of attempts to evade the payment of duty. Perhaps the most ingenious is in connexion with saccharin which ordinarily bears a very heavy duty. It appears that chemicals have been imported which were so nearly related to saccharin that very simple treatment sufficed to convert them into this compound and it was therefore decided that such substances should be liable to the saccharin duty. Many of the entries or description of goods were found to be incorrect, though in some instances the misdescription was not made apparently with a view to evade the revenue's charges. Certain goods, however, were found to be dutiable, as when ethyl chloride was described as "chinaware," collodion as "lace," spirit as "linen manufactures," and caramel as "perfumery." Imported beers are sometimes described also as extract of malt, though showing the composition and general character of ordinary beer. There has been a considerable increase in the number of samples of cider submitted for analysis for the purpose of ascertaining whether the article as imported is derived from the juice of the apple, in which case it is admitted free, or whether it contains added sugar or extraneous spirit, when it is liable to duty. It is a pity, we think, that the duty cannot be increased on brandy when it contains extraneous spirit. In the Excise department there was also a decided increase of samples examined, due to specimens of beer having been taken from publicans and to an increase in the exportation of medicinal tinctures. Some 1200 samples of beer-wort and materials used by brewers have been tested for the presence of arsenic, and it is satisfactory to learn that the great majority of the samples were found to be either quite free from arsenic or to contain only traces. In regard to so-called temperance drinks, of 852 samples obtained for analysis 269 were found to contain spirit in excess of the legal limit. Some contained 3 per cent., others 4 per cent. and 6 per cent., while the highest contained as much as 9·10 per cent. of spirit. With the sanction of the Treasury the Commissioners have extended the benefits of the Finance Act, 1902, to the medical and science schools of teaching institutions and under special regulation most of these have now been allowed to receive pure alcohol duty free for research purposes. We believe we were amongst the first to call attention to the drawback under which those engaged in research laboured through the prohibitive price of pure alcohol. During the past year the quantity of alcohol actually issued duty free for this purpose was equivalent to 2272 proof gallons. In regard to tobacco, in 248 instances the attention of the manufacturer or dealer was called to the fact that the tobacco contained an excess of moisture and in some instances an excess of oil. Liquorice and glycerine continue to be used for adulterating tobacco. Some flavouring fluids examined were intended for use in manufacturing cigars and were reported against on the ground that it is illegal to use flavouring matter of any kind in the manufacture of cigars. We should like to see a similar restriction applied to tobacco. The analyses made for other Government departments contain some interesting reading. For instance, three samples were examined for the fisheries branch of the Board of Agriculture in connexion with a destruction of fish in a Cumberland trout stream by matter discharged into the river from a paper mill on its banks. The discharge consisted of rosin size and it was found possible to prove the presence of rosin in a scum taken from the river which was stated to be similar in character to a substance found upon the gills of the dead fish. Again, samples of cucumber and of tomatoes were tested for the presence of copper for the Royal Gardens establishment at Kew. With the object of destroying a troublesome parasitic fungus affecting these plants the effect of watering them with dilute solution of copper sulphate had been studied in the gardens and it became desirable to ascertain whether the fruit had in this way acquired any appreciable amount of the metal. Samples grown without the copper treatment were also examined and ultimately it was found that no copper had been taken up by either the cucumber or tomato as a result of the treatment which had been successful in destroying the parasitic growth. The work undertaken by public analysts in connexion with the Sale of Food and Drugs Acts is evidently satisfactorily done on the whole, since of the 104 samples referred to the Government chemists the results differed only in regard to 15 cases. Most of the referred samples consisted of milk. We note with some gratification that the Government chemists have turned their attention to the analysis of brandy in relation especially to its admixture with foreign spirit. In two samples the Government chemists' results confirmed the opinion that the samples did not consist of spirit distilled from wine. This acknowledgment of the value of analysis in differentiating genuine brandy from mixtures of foreign spirit practically decides the question in the affirmative that the sale of brandy can be dealt with under the operations of the Sale of Food and Drugs Acts.

UPPER AIR CURRENTS.

THE existence of upper air currents has been pluckily demonstrated by the Rev. John M. Bacon in a long series of balloon ascents, the results of which he communicated to the recent meeting of the British Association. These upper air currents, he shows, will glide one above another in juxtaposition without commingling and will alter their course and obtrude themselves in a most erratic and unaccountable way where they are least expected. This is a somewhat disturbing circumstance in connexion with the warning sounds given by bells placed on submerged rocks or by foghorns. If the warning sounds emitted by these appliances are dependent upon the caprice of upper air currents it is obvious that they may fail to be heard and thus many lives may be imperilled. Sounds conveyed through the upper air will be carried sometimes to abnormal distances in directions at variance with the ground current, being borne to earth over far but favoured plots of ground while they may pass unheard over districts which might be considered to be well within sound range. An illustration of this was given on the occasion of the booming of guns in the Solent when the body of the late Queen was being conveyed from Osborne to Portsmouth. The sound of the guns firing was distinctly heard at comparatively remote places like Oxford, while at intermediate and much nearer places nothing was heard. Mr. Bacon has also made some experiments with aerial bombs which will presumably account for the occasional suprisingly far travel of sound signals as well as their failure at short ranges. He also allowed a number of light bodies of varying sizes to float away into space at different heights and in different circumstances and these when carefully watched have shown the existence of minor but headlong currents, holding perfectly well-defined courses frequently at variance with that of a balloon. The whole series of investigations is obviously of the utmost importance to the shipping trade and continued research in this direction should, we think, enjoy the liberal patronage of the Admiralty and Board of Trade.

THE TESTING OF CLINICAL THERMOMETERS.

COMPRISED in the scheme of work now carried on at the National Physical Laboratory under the superintendence of Dr. Glazebrook, F.R.S., is the testing of clinical thermometers. Very considerable numbers are sent there for this purpose by makers who, it seems, exhibit a laudable desire to receive the official certificate of verification. In 1901 the tests related to 20,389 clinical thermometers, in 1902 to 22,912, and 19,393 for last year. Since the laboratory was started similar institutions have been founded in France and America, respectively, the Laboratoire d'Essais and the National Bureau of Standards. New buildings for the latter are in course of erection at Washington which are to cost £70,000, while £45,000 are to be expended on equipment, items of provision so liberal that the English establishment suffers severely by comparison. The American Bureau has recently been actively organising the testing of clinical thermometers. A large number of instruments of various types and manufacture were studied for magnitude of errors, aging effects, the nature of the component glass, and other characters. The results pointed to a lack of uniformity in the standards in use by the makers and discrepancy in temperature readings. Consequently the American manufacturers were notified of the erroneous qualities of the thermometers and invited to submit their standards for revision. To this they responded readily, while they have shown consistent interest in the endeavour of the Bureau to introduce a uniform scale of temperature. The methods of testing employed, which are likely to be of service in scientific workshops, will be published shortly. The general nature of the test is a preliminary examination for defects of construction, such as defective graduation, presence of cracks in the glass, air bubbles in the bulb, too great effort to throw back the index below 95° F., and other construction points. No certificate can be allotted where any of these defects are observed at the first stage. Subsequently, for instruments passing these preliminaries, comparison is effected at four different temperatures with the standard thermometers of the American

Bureau in order to determine the magnitude of scale corrections.

SANITARY ADMINISTRATION AT BEXHILL.

WE understand that considerable opposition is being raised at Bexhill to a recent decision of the town council, whereby the appointment of sanitary inspector of the borough will be practically abolished and his duties transferred to the borough surveyor. Considering that the town, which is on the Sussex coast and has a population of about 12,000, is a new and increasing seaside resort within easy reach of London, the wisdom of such a policy seems to be very doubtful. Local authorities are presumably well informed as to local needs, but even though it may be supposed by municipal economists that the sanitary inspector is a "burden on the rates" no health resort can afford to be apathetic in matters of public health administration. An epidemic of enteric fever would be financially an instructive experience in the circumstances. Not only are the great majority of the medical practitioners decidedly opposed to the action of the council but they have signed a petition to the Local Government Board protesting against it and a correspondence published in the *Bexhill-on-Sea Observer* shows that one of the councillors has given notice of a motion for separation of the offices. As there seems to be quite enough work to occupy a sanitary inspector the retention of the separate appointment would apparently be advisable.

PRIMARY TUBERCULOUS ENDOCARDITIS.

AT the meeting of the Société Médicale des Hôpitaux of Paris on July 15th M. Œttinger and M. Braillon communicated an important paper on a subject which has received little attention—primary tuberculous endocarditis. Endocarditis supervening in the course of tuberculosis and due to a secondary infection has been well recognised by French writers since Tessier collected 47 cases in his thesis on "Lésions de l'Endocarde chez les Tuberculeux." This form of endocarditis is usually latent and has only a pathological interest, it does not modify the evolution of the pulmonary tuberculosis, and is due to a secondary infection originating in the pulmonary cavities in which numerous microbes flourish. Nearly every pyogenic microbe has been found in the cardiac vegetations of the phthisical. On the other hand, endocarditis due to the growth in the cardiac valves of the tubercle bacillus appears to be one of the rarest complications of tuberculosis. The lesions may be vegetative or ulcerative. All the recorded cases occurred in pulmonary tuberculosis, generally in its last stage, except one in which the lungs were sound and there was tuberculosis of the spleen. Recently M. Braillon and M. Jousset have reported a unique case of primary tuberculous endocarditis in which the tubercle bacillus was found in the blood during life and in which no other visceral lesion was present.[1] The case ran a subacute course resembling that of malignant endocarditis and proved fatal in three months. In the following case tuberculous endocarditis ran a chronic course, producing a cicatricial lesion of the valves similar to the adhesions which may be left after recovery from tuberculous pleurisy. A woman, aged 23 years, was admitted to hospital on May 20th, 1903. Her father died from tuberculosis. The patient enjoyed good health until July, 1902, when she was admitted to another hospital suffering from feverish symptoms, headache, and digestive troubles. After she had been in hospital some time signs of heart disease were detected. She was discharged in October. Thereafter her health varied and menstruation was irregular and deficient in quantity. On examination the patient was pale and wasted. The apex beat of the heart was in the fifth intercostal space, slightly outside the nipple line. The cardiac dulness extended beyond the right border of the sternum. At the apex a thrill was felt. There were presystolic and systolic mitral murmurs and reduplication of the second sound at the base. The liver extended three or four fingers' breadth below the costal border. The temperature ranged between 101·3° and 102·2° F. There was cough without notable expectoration. At the bases of the lungs there were signs of pleuritic effusion and subcrepitant râles. On the left side puncture yielded only a little blood and on the right sero-fibrinous fluid which presented the cytological characters of inflammatory effusions (polynuclear cells with numerous endothelial cells). On May 25th the temperature was normal. The pulmonary signs at the bases underwent resolution but in the right supraspinous fossa the respiratory murmur was feeble and there was prolonged expiration. The patient remained in hospital until February, 1904, without the cardiac signs changing much. At times there was cardiac failure with dyspnœa, oliguria, congestion of the liver, and irregularity of the pulse. The temperature frequently exceeded 102·2°. Death from cardiac failure occurred on Feb. 10th. The necropsy showed a slightly enlarged heart, adhesions between the two layers of the pericardium, tricuspid and mitral stenosis from old thickening, and sclerosis of the valves. On the auricular side of the mitral valve were small vegetations of the size of the head of a pin. The aortic valves retained their normal suppleness but showed on their cardiac side fine vegetations. Microscopic examination of the valvular lesions showed chronic endocarditis and in places subacute endocarditis but no signs of tuberculosis. Evidently the endocarditis extended back for two years and the aortic lesions were quite recent. There were at the apex of the right lung cicatricial retraction and three small cretaceous tubercles. A fragment of the mitral valve after being broken up and artificially digested (according to the method introduced by M. Jousset) yielded a culture of the bacillus tuberculosis. It is noteworthy that the tuberculous endocarditis ran a chronic course and produced lesions not differing from ordinary valvular lesions. M. Œttinger and M. Braillon admitted that the pulmonary lesion might have been the source of infection but they still thought that the use of the term "primary endocarditis" was allowable. The fact that no evidence of tuberculosis in the valvular lesions could be found by ordinary methods of examination is also noteworthy. However, Peroud and others have shown that in certain cases of pericardial adhesions undoubtedly tuberculous nothing histologically characteristic of tuberculosis may be found at the time of examination.

ILLITERATES AND THE MIDWIVES ACT.

THE recently issued report of the medical officer to the Midwives Act committee of the Lancashire county council fully justifies some of the apprehensions expressed in these columns while the registration of midwives was under debate. We pointed out that under the new law, to be passed for the benefit of parturient women of the humbler classes, the wholly ignorant "Gamp" might acquire a position recognised by law and find her incompetency justified by registration under an Act of Parliament. The midwives who have already been enrolled upon the representation of the Lancashire county council number 418, and among these are 86 women who are "illiterate." The section under which they are placed upon the roll is as follows: "Any woman who within two years from the date of this Act coming into operation claims to be certified under this Act shall be so certified provided she holds a certificate in midwifery from the Royal College of Physicians of Ireland, or from the Obstetrical Society of London, or the Combe Lying-in Hospital and

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[1] THE LANCET, August 22nd, 1903, p. 551.

Guinness's Dispensary, or the Rotunda Hospital for the Relief of the Poor Lying-in Women of Dublin, or such other certificate as may be approved by the Central Midwives Board, or produces evidence satisfactory to the Board that at the passing of this Act she has been for at least one year in *bonâ-fide* practice as a midwife and that she bears a good character." The phrase "*bonâ-fide* practice as a midwife" is a vague one such as is sometimes introduced into an Act of Parliament and left to be interpreted by those to whom the administration of the Act is confided. It is, however, at least arguable that the women intended are those to some extent *ejusdem generis* with those whose mode of education is specified. If this be admitted it becomes illogical as well as troublesome to frame regulations for midwives and at the same time to enrol women quite incapable of carrying them out. The rules of the Central Midwives Board may, no doubt, be imparted orally to the illiterate but they cannot be obeyed by women unable to write, for they require written reports to be made. Nor are the rules otherwise capable of being understood and carried out by those so stupid and ignorant as not to be able to read in the twentieth century. Compulsory education has now existed for some time, but reading and writing have been for a much longer period within the reach of all endowed with a reasonable amount of intelligence and ambition.

THE VALUE OF EXPLORATION IN SUSPECTED MALIGNANT DISEASE OF THE OVARY.

IT must have happened to all surgeons to meet with cases from time to time where the question as to whether they were justified in recommending operation in what appeared to be instances of undoubted malignant disease has been a very difficult one to determine. It is always a difficult matter to decide to give a patient no chance at all and to condemn to death the subject of an obscure abdominal tumour with the opinion that no operation is justifiable or should be attempted. The question of diagnosis in such cases is so difficult a one and mistakes are so frequently made that the surgeon is always loth to give up all hope and to do nothing. On the other hand, cases of undoubted malignant disease of the ovary, for example, or of the other abdominal organs are often so little benefited by operation and the consequent disappointment to the patient is so severe that the surgeon is disinclined to undertake what he feels cannot but be a hopeless task. In the Ingleby lectures delivered this year Dr. C. J. Cullingworth discusses this very important question and from his large experience of such cases relates some very striking examples of what can be done by modern surgery. His examples are mainly ones of malignant disease of the ovary, a class of tumour of which our knowledge is still far from perfect, and a class of growths therefore in which the exact diagnosis of malignancy must always be a matter of considerable doubt. He brings forward a very strong plea for exploration in such cases and relates some most instructive cases where such growths have been removed with complete success not only immediate but also remote. As he justly points out, what are the criteria, for instance, by which we can say for certain that a papilloma of the ovary is a benign or a malignant tumour? In his opinion at the present time we have no absolute criteria, either clinical or microscopical, by which we can recognise the character of such a growth with certainty. It is often only by the subsequent history of the case that the question can really be decided. Even if the pathologist says, as he often does say, that any given tumour *is malignant*, shall we not if possible remove it in the hope that it may not recur? Undoubtedly, yes; and more especially in the case of many of the more obscure forms of pelvic tumours in which certainty as to their exact nature sometimes cannot be obtained even after they are removed from the body. When the abdomen has been opened and an apparently malignant tumour has been exposed we should try to remove it, at any rate in those cases where it appears possible to do so, in the hope that we may be successful. Even if we do not cure the patient we may prolong life, as several of Dr. Cullingworth's cases show, by many years. And the wisdom of this procedure is seen best of all in the case of ovarian tumours where the border-line between the benign and malignant growths is so ill-defined and obscure.

THE BUYING AND SELLING OF MEDICAL PRACTICES.

AT the recent Lincolnshire assizes, before Mr. Justice Bray, Mr. Douglas Wardleworth recovered a sum of £125 damages for misrepresentation on the sale of a medical practice from Mr. Thomas Cornelius Lawson. The misrepresentations alleged referred to the income derivable from the practice, to the nature of the fees to be expected, to the absence of competition, and to the price paid for the practice, but a feature in the case, which otherwise was not of a nature to call for comment, lay in the fact that Mr. Lawson, who became qualified to practise in 1872, had bought and sold no less than 29 or 30 practices in his professional life! This is a legitimate method of livelihood, no doubt, but at the same time the fact that the vendor is in the habit of so dealing is one which the purchaser would be wise to take into account, if he were aware of it, and a person so selling cannot complain if his representations are scrutinised somewhat unfavourably should any dispute arise with regard to them. Careful inquiry before completing the purchase of a practice will save both parties much anxiety and possible differences afterwards. The intending incomer has a right to the fullest possible information, and, besides inspecting all accounts carefully, he can in most cases make inquiries unobtrusively which will enable him to corroborate or disprove for himself statements as to the class of patients to be expected and as to the presence or absence of competition, with regard to which the vendor may be inclined to take too sanguine a view.

THE RANGOON LYING-IN HOSPITAL.

WE are very glad to see from copies of the *Rangoon Gazette* which have been forwarded to us by Dr. T. F. Pedley that the unfortunate differences which have been crippling the work of the Rangoon Lying-in Hospital have been satisfactorily settled through the good services of Sir Hugh Barnes, Lieutenant-Governor of Burmah. In THE LANCET of Oct. 17th, 1903, p. 1106, we published a short annotation dealing with the unfortunate quarrel which had taken place over the management of this institution. There is no necessity now to recall all the details of the dispute, suffice it to say that owing to the differences of opinion between the official elements and the civil the support given to the hospital had very markedly fallen off and its utility had been much crippled thereby. Moreover, its proper function as a lying-in hospital and a training school for midwives had been abrogated and its usefulness much impaired. Happily, now all the points at issue have been satisfactorily settled, the institution has been restored to its original purpose and the honorary civil medical staff, who had been dismissed by the orders of the late lieutenant-governor, have been reinstated in their positions. A share, too, in the management of the hospital has been restored to the public who, in the first instance, supplied at least half the funds for the rebuilding. There is a very large demand in Burmah for properly trained midwives and in this institution native women are given a complete training and are then able to do something to mitigate the sufferings of their own country-women. The system of dealing with confinement cases prevalent amongst the Burmese and neighbouring people is of the most cruel description and entails an enormous mortality amongst the mothers and children. It will be possible in the new hospital to train annually a considerable number of women and they will be of the greatest assistance as nurses amongst the natives who, unlike many of the Indian races, have none of the caste prejudices and social restrictions which prevent their women from receiving treatment at the hands of physicians of the male sex. Now that all sources of trouble have been removed we have no doubt that the public will come loyally to the support of a most deserving institution and by liberally subscribing to its funds will enable it to carry out the work which it is intended to perform.

THE TREATMENT OF APPENDICITIS.

At the last meeting of the Zürich Society of Medical Practitioners Dr. Theodore Zangger spoke on the subject of the primary treatment of appendicitis. He said that he had always believed it injudicious to let the contents of the colon stagnate, as this hindered the proper drainage of the appendix and offered the most favourable condition for the increase of virulent organisms such as bacterium coli. He advocated the use of small enemata, from half a pint to a pint in bulk and at a temperature between 60° and 70° F., repeated once or twice at the onset and afterwards every two days. Narcotics should be used as little as possible and they could often be dispensed with altogether, especially as the abdominal pain could be greatly relieved by the application of cotton-wool saturated with alcohol of 96 per cent. strength covered with gutta-percha paper and renewed every eight or 12 hours.[1] Of course, cases which began acutely must be referred to a surgeon as soon as possible. Dr. Zangger also quoted the good results which Professor Bourget of Lausanne has obtained by treatment on the same principles.

THE LOCALISATION OF ALKALOIDS IN PLANTS.

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The Local Government Board for Scotland in considering the reports made to it by medical officers of health regarding cases of small-pox has had its attention drawn to cases of children (the majority of whom were under five years of age) who presented no evidence whatever of successful vaccination either in the presence of local scars or in modification of the disease, although said by the parents to have been vaccinated. Similar cases have been observed in the course of the inspection of contacts. Further inquiry by the Board has led to the discovery that in many such cases a certificate of successful vaccination had been lodged with the registrar. After investigation of the circumstances under which this occurred the Board has issued an important memorandum in which it states that it "is satisfied that considerable laxity exists in the granting by medical practitioners of such certificates, in respect that they are not always founded on personal inspection of the child after a sufficient interval and occasionally have even been signed at the time of the operation, when its result was unknown and when subsequent inspection would have disclosed failure." A practitioner who grants a certificate of successful vaccination in such circumstances places himself in a very serious position The certificate is to the effect that the operation was performed by the person who signs it and that it has succeeded, and the Board rightly points out that if in either respect the certificate is false the signatory is liable to a criminal prosecution There have already, we are sorry to say, been successful prosecutions in these circumstances, both in England and Scotland, and undoubtedly the medical men in question must be regarded as having committed a serious violation of public duty, properly involving serious punishment The Board therefore has done right to make it publicly known that if in future any case of this nature comes to its knowledge it will be reported to the Crown with a view to proceedings being taken

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[1] The Lancet, Jan. 28th, 1899, p. 222.

[1] Ueber Ptomaine, Dritter Theil, 1886.

THE TAMWORTH TOWN COUNCIL AND THE REPORT OF ITS MEDICAL OFFICER OF HEALTH.

WE recently pointed out[1] that the town council of Tamworth (Staffordshire) was greatly at fault in certain notions which it held with respect to the reports of the medical officer of health It appears that "scenes' in the council chamber were attributed to "the action of the medical officer of health in sending his annual report to the Local Government Board and the county council without first intimating to this council his intention to do so" Unfortunately, the council did not at the same time produce any evidence to the effect that it was entitled to have the first inspection of the document in question, and, distressing as it may appear to parochially constituted minds, Dr H J Fausset, the medical officer of health, complied with the statute, even at the risk of ruffling the sensibilities of the council These worthy gentlemen probably now recognise that even their authority has its limitations and have avenged themselves by refusing to pay the bill of £3 18s for printing the report We are glad to see that the *Tamworth Herald* of August 13th contains a letter of protest against this petty and, no doubt, futile attempt at coercion, the writer being Mr A M Sculthorpe, a medical practitioner of many years standing, who has been four times mayor of the town The real cause of the trouble is in all probability the inveterate tendency of some local authorities to consider that the medical officers in their service are dependents requiring to be kept in tutelage by a chairman or clerk to the board Conflicts of this kind are not rare in the annals of local government In 1897, before the creation of the metropolitan boroughs, the vestry of St George's, Southwark, imagined that it could deal with the reports of its medical officer of health as the town council of Tamworth seeks to do The incidents of the controversy, including an appeal to the Local Government Board, were described in THE LANCET at the time[2] and we recommend perusal of the story to the town council of Tamworth

THE medical officer of health of the Cape Colony states that for the week ending July 30th the condition of plague in the Colony was as follows At Port Elizabeth 2 fresh cases were discovered—namely a coloured male on July 24th and another on July 28th Of 90 rats and 234 mice captured or found dead and bacteriologically examined 16 rats and 4 mice were plague infected In the Cape Town and Harbour Board area 520 rodents were examined but none was infected with plague As regards the Mauritius, a telegram from the Acting Governor received at the Colonial Office on August 19th states that for the week ending August 18th there were 5 cases of plague and 3 deaths from the disease As regards Hong Kong a telegram from the Governor received at the Colonial Office on August 22nd states that for the week ending August 20th there were 1 case of plague and 1 death from the disease

IT has been brought to our attention that in our obituary notice of the late Sir John Simon we omitted from the list of that great sanitarian's colleagues the name of John Netten Radcliffe Radcliffe, who was assistant medical officer to the Local Government Board from 1871 until 1883, was one of Simon's most trusted friends and coadjutors His death in 1884 at the comparatively early age of 58 years deprived sanitary science and epidemiology of one of their finest exponents and also lost to this newspaper a valued friend and contributor

THE assistant of the Governor of Odessa, Privy Councillor Stark, M D, died on August 13th, aged 67 years, from paralysis of the heart To him were due, says the *Novoe Vremya*, the successful measures which have protected Odessa and district from Asiatic epidemics

Looking Back.

FROM

THE LANCET, *SATURDAY*, AUGUST 26, 1826.

Much difference of opinion exists, as to the *contagiousness* of *phthisis* This very difference of opinion shews that, at all events, it must be of rare occurrence The exceptions indeed are so numerous as to render it the most probable opinion that the disease is not contagious, and this, I confess, is mine

Causes This disease consisting in inflammation of the lungs it may be brought on by all the causes of inflammation though it often arises imperceptibly, or without being noticed Exposure to cold, injuries of the lungs, irritating matters inhaled in breathing, are among the most frequent It follows also various other diseases, which may be considered to act as *exciting causes*, such are, common inflammation in the lungs, not wholly subdued, neglected catarrh, ulceration, or other cause of irritation about the larynx, any other disease attended with continued *pyrexia* or febrile action, this state appearing to give a disposition to slow inflammation in the lungs, that at length ends in change of structure

Much depends upon *predisposition*, which appears to be induced by a variety of circumstances *Phthisis* is very frequent in cold and variable climates while it is comparatively rare in hot ones It is more frequent between the ages of 15 and 35, than either before or after The *predisposition* is evidently hereditary in many families, and is affected by corporeal figure, the tall and thin, and narrow chested, and the deformed being the most disposed A great number of *phthisical* subjects exhibit marks of *scrofula* in their habit, or have done so at a former period Hence *scrofula* is considered as a *predisposing* cause though we do not know how this acts unless by being attended with a general disposition to inflammation and that of an indolent kind This, in fact, is all we know of scrofula itself[1]

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eory and Practice of Physic,
Theatre, General Dispensary,
On Phthisis Pulmonalis,
d vulgarly Decline)"

DEATH OF A CENTENARIAN —The death has recently occurred, near Taunton, of Mrs Elizabeth Jenkins, who celebrated her 105th birthday on Jan 1st last The deceased who was born in Somerset, had been the recipient of bounties from Queen Victoria and the present Queen on account of her great age and also owing to the fact that at one time she had six sons serving in the army The local newspapers state that her age has been verified by reference to the parish register midwives and in this institution native women are given a complete training and are then able to do something to mitigate the sufferings of their own country-women. The system of dealing with confinement cases prevalent amongst the Burmese and neighbouring people is of the most cruel description and entails an enormous mortality amongst the mothers and children. It will be possible in the new hospital to train annually a considerable number of women and they will be of the greatest assistance as nurses amongst the natives who, unlike many of the Indian races, have none of the caste prejudices and social restrictions which prevent their women from receiving treatment at the hands of physicians of the male sex. Now that all sources of trouble have been removed we have no doubt that the public will come loyally to the support of a most deserving institution and by liberally subscribing to its funds will enable it to carry out the work which it is intended to perform.

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[1] THE LANCET, June 18th p 1739

[2] THE LANCET, July 31st (p 263) and Sept 18th (p 733), 1897

THE TREATMENT OF APPENDICITIS.

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[1] THE LANCET, Jan. 28th, 1899, p. 222.

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The question of ventilation is one of importance in all industries, as well as in those in which the nature of the work calls special attention to it. It involves more than the provision of air space and requires more than the goodwill of manufacturers for its solution, and it is one in which the workers themselves are not always on the side of innovation and improvement. The necessity for fresh air is not patent to every intelligence and the cruder method of opening windows and so putting workers in a draught, which is the only means of ventilating familiar to many minds, is reasonably unpopular with persons carrying on sedentary occupations, either in a very high temperature or in unwarmed rooms, in cold weather. With regard to the question of warmth occupiers are instructed to aim at a temperature *not below 60° F. and factory inspectors have* been recently reminded that a reasonable temperature is to be maintained in factories and workshops, "but the measures so taken must not interfere with the purity of the air of any room in which any person is employed."

[illegible] ome of the lady [illegible] difficulty. Miss [illegible] vailing in small dressmaking and tailoring workshops and goes on to speak of a large tobacco factory in which things were no better. She says: "The various processes were carried on in flats round a central well which ran from the ground floor to the top of the building and was devoid of any maintained ventilation. It was quite striking how the impurity of the air increased as one ascended and the accumulated foulness at the top had its comment in the pale faces of the workers there." Miss Sadler reports at length upon the tailoring shops in Cornwall and mentions insufficient means of ventilation as their chief defect. She says: "Most of my visits were paid in April, when the weather was still far from warm, and this lack of ventilation was therefore more noticeable than at a later season. I can honestly record, however, that visits amongst the tailoring slums of Soho and the East-end of London have failed to leave one with such a bad impression. ...... I found in nearly every case the men and women herded together in the workrooms, the men sitting tailor fashion on the floor and the women near them. Of ventilation there was none, unless the small amount of fresh air which might filter through the chinks of the doors or the badly fashioned windows might be dignified with the title of such. ...... Long talks with the employers gave little result. The invariable answer was that the women and men never complained. As a matter of fact, the men often complained to me in private: the women did not, but their pale, anæmic looks were more truthful than pages of spoken or written complaints. Numerous notices to, and correspondence with, the local authorities concerned has perhaps done some good, but it was difficult to impress upon them the fact that the provision of one or two windows cannot be considered sufficient means of ventilation, taking into consideration the fact that those windows have to be closed in cold weather on account of the draught." A London inspector, Miss Vines, writes of the absence of all ventilation in basement workrooms and of one of these where the foreman kept a bottle of lavender salts and burned brown paper to aid in the recovery of the girl *workers who were constantly fainting. Adequate ventila*tion is not likely to be an improvement in the conditions of factory life until the workpeople themselves demand it after having been sufficiently educated in domestic hygiene to desire it in their own homes. Reports, however, speak of increasing intelligence in this as in other matters, particularly where gas stoves and similar methods adopted for raising the temperature at the same time vitiate the air; of these the workpeople complain readily. Reference is made by the lady inspectors and elsewhere in the report to the improvements being gradually introduced in the matter of separate and sanitary closet accommodation for the two sexes. This is regulated by an Order which came into force in July, 1903, and where *it is not in force instances of unsuitable or insufficient* accommodation can be referred to the district council. A state of affairs therefore which in many factories and workshops in town and country alike has been disgusting, indecent, and prejudicial to health is becoming better, the amelioration being welcomed by workers of both sexes. With reference to the attitude of local authorities in sanitary matters the inspectors of the various districts in England give satisfactory accounts of the assistance and coöperation supplied by them and in Scotland and Ireland there appears to be improvement. As to sanitation generally as well as in the provision of sanitary conveniences where large numbers of persons of both sexes are employed, industries of a temporary nature, such as fish-curing, where there is pressure of work at certain seasons and where permanent buildings are not used, seem to present the greatest difficulties. The curing houses at Hull, where the industry is largely practised, appear to be well looked after by the city council and to leave little or nothing to be desired. Great Yarmouth has been very bad in this connexion but seems to be improving.

Writing of South Wales an inspector, Mr. Wolfe, says: "Outside the two county boroughs and, say, two other *districts, sanitation (in factories) appears to me to be as* much a matter of chance as anything else." Of North Wales Mr. Hilditch says: "Much has been done during the year in the matter of sanitary accommodation at factories and the conveniences are approaching something like the prescribed standard. Still there remain a considerable number of places much below it."

Mr. Vaughan reports of North London a continued tendency to move factories to the suburbs where rents and rates are lower and the district generally is less congested. Reference is made to this movement in other reports, Mr. Hoare stating that in East London decentralisation has almost ceased. It is an interesting development where it makes progress, but a note supplied by one of the lady inspectors, Miss Vines, causes a little doubt whether it will obtain enthusiastic support from all classes of workers. Having spoken of the tendency to remove from central London to the suburbs she continues: "With reference to this matter it is curious to note how frequently London born girls are quite unable to accustom themselves to the absence of the rush and whirl of city life. Some time since a large factory was removed to an outer suburb of North London and those of the employés who lived in the city vacated their city homes and came, as the management hoped would be the case, to live in the neighbourhood of the factory. On inspecting the factory this year, however, I was informed that those women and girls who had with the factory removed from the city had been unable to stand the comparative quietness of the district. It was too dull, they said. They had therefore returned to central London to live and came out by train every day to work in the factory." In other words, it is among the women and girls who especially should be benefited by removal into healthier surroundings that least gratitude for the improvement of their lot is likely to be found. They will be ready to put up with the overcrowding and all the other evils which go to make the "housing problem" urgent rather than to give up the cheap music hall and other excitements of city life. With them the "garden city" is by no means likely to find favour.

THE WAR AND THE SUPPLY OF MEDICAL MEN FOR CIVILIANS.—Every day, says the *Novoe Vremya*, the war is thinning the ranks of the St. Petersburg medical men and thus the remaining contingent of town medical men is overloaded with work. Measures are being taken for recruiting a temporary staff to continue on duty during the absence of the city medical practitioners.

ANNUAL REPORT (FOR 1902) OF THE REGISTRAR-GENERAL.

THE close of a Parliamentary session is usually the signal for the issue of a batch of overdue departmental reports in order, we presume, to insure their delivery to Members before the prorogation. Among the Blue-books presented to both Houses on Monday, August 15th, is the Registrar-General's report on the vital statistics of England and Wales for the year 1902.

In reviewing Mr. W. C. Dunbar's first contribution to what we described as virtually a new series of the reports for which he as Registrar-General is responsible, we ventured, on behalf of our profession, to augur a favourable reception for the improvements as regards arrangement which at the dawn of a new century had been introduced in the national records of birth and mortality. A careful examination of the report now before us considerably strengthens the impression left on our minds by the perusal of its predecessor. On reading that portion of the preface to the present volume which bears his signature we notice that the Registrar-General has continued to devote to the details of registration a degree of personal interest which, in recent years at any rate, has not invariably been apparent. Whether it be that nowadays social questions involving considerations of public health have come to absorb more profoundly than of yore the attention of State departments we know not, but there is a passage in the recently issued report of the Committee on Physical Degeneration which indicates that even in their present form the statistical reports of the Registrar-General are appreciated, whilst it conveys the further impression that if the information which they contain were supplemented in the manner and to the extent desired by the committee their value for State purposes would be vastly increased. But the time has at length arrived when the vital history of thirty-three millions of Englishmen, the circumstances attending the life and death of half a million annually of our fellow men, has become a question not of medical interest only but of grave national concern.

We observe that these annual reports are formally addressed to Mr. Walter H. Long who is the Minister accountable to Parliament for the conduct of that office and who also controls the operations of the Poor-law department of the Local Government Board. We further note that in its recent report to Parliament the committee just referred to appeals to the President of that Board to establish and to maintain from henceforth a State register of pauper sickness, the absence of which, as a means of estimating the health of that stratum of the community which is most prone to physical deterioration, the committee greatly deplores. "Of great value," says the committee, "are the Registrar-General's statistics concerning the mortality of the whole population without distinction of social status; but for the reason that no particulars are given on the latter point these statistics are of little value in the present connexion. And yet, as regards sickness that is not necessarily fatal, it appears that for years past there has practically run to waste in this country an enormous mass of information which, had it been arranged and analysed on suitable lines, would have been simply invaluable to the committee at the present juncture. ...... The committee therefore strongly recommends that the assistance of the Local Government Board should be forthwith obtained, with a view of setting on foot and maintaining from year to year a register of sickness (not confined to infectious disease) treated by the Poor-law medical service." The committee further thinks that the tabulation and analysis of such sickness might advantageously be intrusted to the General Register Office which possesses a trained staff and other machinery appropriate for the work. Some years ago an attempt was made to establish a local sickness register in Manchester, largely on the initiative of Dr. Arthur Ransome, then of that city. The undertaking was successful for the time, but being a voluntary one the clerical labour involved soon became too heavy for private resources and, unfortunately, the project was ultimately abandoned, merely from lack of funds. But the Privy Council Committee's present suggestion involves the creation of a State organisation complementary to the anthropometrical survey, the establishment of which it also recommends. And in these circumstances we are convinced that great advantage would result from such a measure which would, we think, receive the support of our profession and we further cordially join with the committee in advocating its initiation at an early date. In that event it is to be hoped that the Registrar-General will see his way to include in his report an annual record of sickness as the natural adjunct to his present record of mortality.

Turning to that part of the report which traces the movement of the national birth-rate, we find that although the rate of births has not further fallen since 1901, it still remains at 28·5 per 1000 of the population, which is the lowest rate on record and is considerably below the decennial average. Turning to the marriage-rate, we notice what at first sight promises to be a set-off to the declining birth-rate. The time-honoured mode of stating the rate of marriage is in terms of persons living *at all ages*, and thus computed the marriage-rate in the three periods ending with 1882, 1892, and 1902 were 15·2, 15·5, and 15·9 per 1000 respectively, showing a *progressive increase* in the marriage-rates as ordinarily calculated. But since a large majority of the population are either already married or are below the earliest marriageable ages, it is obvious that the population at all ages is not a satisfactory standard by which to calculate an increase in the rate of marriage. If the rates be calculated on the unmarried and widowed part of the population *at ages above 15 years* the apparent increase here noted will be turned into a decrease; for the rates in the same periods on this basis are 51·5, 49·8, and 48·7 per 1000. Careful investigation of the facts accordingly shows that although the marriage-rate has increased in proportion to the whole population it has decreased in proportion to that section thereof amongst whom marriages take place.

The most satisfactory part of the report is that which affirms for the whole country a still further decline in the mortality which, happily, has for several successive years been steadily decreasing. Thus we find that the death-rate of England and Wales in the year 1902 did not exceed 16·2 per 1000 of the population at all ages—a rate which was lower than that of any other European State, with the exception of Denmark, Norway, and Sweden. Never since the year 1837, when civil registration was established, has the death-rate been so low as this, the nearest approach thereto having been in 1894 when the rate was 16·6. The greatest saving of lives occurred among children under five years old, at which age the 1902 rates were the lowest hitherto experienced in England both among boys and girls. Reference to the tables and the accompanying remarks, in which are set forth the facts and causes of mortality among the young, indicates that there still prevails in the town districts of England a disproportionate waste of child life. Even in the favourable year under review there was at this critical age an excess of more than 40 per cent. in the town rate of mortality as compared with the country. The tables show that this difference is not due to any one disease or group of diseases in particular, but that the child mortality in towns is above that in the country from every one of the nine tabulated causes. Passing on to consider the causes of death at other ages, the report tells us that from most of the prevalent diseases there has been less than the normal loss of life in 1902. Tuberculosis, for example, which is responsible for nearly 11 per cent. of the mortality from all causes, was fatal in 7356 fewer instances than the average. Among tuberculous diseases pulmonary phthisis is the most destructive, but the death-rate from this disease among males was below the average by 84 per 1,000,000 and among females by not less than 96 per 1,000,000 of the respective populations. There has been in 1902 a considerable decrease in the fatality of tuberculous affections of the brain and its membranes, the mortality from which is practically limited to infants and very young children, not fewer than 68 per cent. of the total deaths being those of infants under the age of five years.

Tuberculous peritonitis is another affection due to the same parasite which is mainly fatal at the earlier ages. The mortality from this disease also was much lighter in 1902 than the corrected average. It is because of the ambiguity attaching to the term *tabes mesenterica*, which unfortunately is still sometimes used as a synonym for tuberculous peritonitis, that difficulty arises in estimating the actual saving of life due to reduction of mortality from diseases of the tuberculous class Among the other more important diseases dealt with in the report there are two only that showed abnormally high fatality in the year 1902, these were cancer and diabetes mellitus The recorded death rate from the disease last named has been steadily increasing for many years past, but it is probable that some of this increase is apparent only and is due to improved medical diagnosis According to the returns the mortality from diabetes mellitus is greater in extra metropolitan England than in London and is increasing much faster among women than among men

In view of the increased scientific interest now taken in regard to cancer prevalence the statistics of mortality from this disease are properly very complete although the corresponding data with respect to its incidence are still sadly lacking The tables before us show that in proportion to population the fatal cases of malignant disease are now more numerous than formerly Nevertheless, some consolation may be derived from the fact that although the death rate has continued to increase year by year the rate of increase was less in 1902 than in the year immediately preceding, notwithstanding the more precise classification now in vogue In view of this encouraging fact the Registrar General remarks "The nature and origin of this disease being now the subject of careful investigation under Royal patronage it is permissible to hope that the cause of this distressing malady will ere long be discovered and that thus its further ravages may at least be controlled" Until quite recently cancer was believed to be more prevalent in the rural districts than in the urban, this opinion being based on examination of crude rates of mortality—that is to say, the rates uncorrected for age differences in the population But when the necessary correction has been made the opposite conclusion follows, this is shown in the present tables, from which it may be gathered that the country rates are much lower than those of the town There is, however little doubt that our great towns are unfairly handicapped in this respect on account of the presence therein of large hospitals and other establishments to which country patients resort for the operative treatment of cancer Inasmuch, however, as no correction has hitherto been attempted for this complication too much reliance should not be placed on the figures contrasting urban with rural mortality from this disease

THE REPORT OF THE SANITARY COMMISSIONER WITH THE GOVERNMENT OF INDIA FOR 1902.[1]

THE volume containing the report of the Sanitary Commissioner with the Government of India for 1902 is somewhat reduced in bulk as compared with its predecessors but it embodies the same subjects and travels over the same ground The fact that these reports deal with the events making up for the most part the medical and sanitary history of India as a whole necessarily entails considerable delay in publication, during which the official returns and data have to be collected, arranged analysed, and commented upon all of which, it is needless to say, give rise to a good deal of laborious work It is not so surprising therefore as it may seem at
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The health of British troops serving in India in 1902 with an average strength of 60 540 compares in one respect unfavourably with the previous year in that the death rate (14 68) was higher The chief causes of admission into hospital were venereal diseases and ague which accounted for 26 per cent and 23 per cent respectively of the total number of admissions from all causes Venereal diseases and enteric fever gave rise to increased admission rates as compared with 1901 The chief causes of death in 1902 were, as in 1901, enteric fever and abscess of the liver Enteric fever accounted for 29 per cent and abscess of the liver for 13 per cent of the total number of deaths Among the troops comprising the Delhi manœuvres and Durbar force the chief cause of death was, we learn, enteric fever, accounting as it did for 56 per cent of the total number of deaths among the troops of this force It is a deplorable fact that, despite what bacteriological science has done in giving more precision to our investigations, and despite all the efforts made to search out and remove the causes of enteric fever, so little has been really accomplished in lessening the prevalence of that disease in India While the frequency of epidemics and the losses from cholera among British troops in India have been decreasing for many years past we have failed to make much, if any, impression upon the prevalence and amount of enteric fever in that country

As regards commands and stations, Bombay was the most unhealthy of the four commands, Bengal coming next Among stations of over 100 strength the highest death rates were recorded at Barrackpore, Murree Kakool, Naini Tal, Attock and Fatehgarh Abscess of the liver was the chief factor in the mortality at Barrackpore and Naini Tal, and enteric fever at Kakool Among stations of over 1000 strength the highest death rates were recorded at Colaba and Kurrachee enteric fever being the chief cause at the former station There were only three cases of cholera admitted among the European troops during 1902, as compared with 12 cases in 1901 and 107 cases in 1900 In nearly all stations where a decrease occurred in the admission rate for ague in 1902 as compared with 1901 the decrease was not unnaturally attributed wholly or partially to the measures taken to prevent the breeding of anopheles mosquitoes The decrease in the admission-rate for malaria at Mian Mir was far greater than at any other cantonment in India and the measures undertaken there in anti malarial operations, which were very skilfully devised and superintended by medical experts are well set forth in the Sanitary Commissioner's report (*vide* Section IX pp 103–07) and are also described by Dr J W W Stephens in a paper published in THE LANCET of March 5th, p 637 The difficulties to be grappled with in India are immense and will probably appear insuperable to those acquainted with that country Mian Mir cantonment, it will be remembered, had been examined by the Royal Society's malaria commissioners in 1901 and operations based upon their recommendations were vigorously carried out in 1902 The Sanitary Commissioner with the Government of India considers that on the whole the results of the experiment are against the employment of anti mosquito measures as a practical means of combating malaria in such cantonments as Mian Mir As regards the administration of quinine to the troops, however he thinks that the experiments clearly showed that 15 grains of quinine on two successive days weekly was a powerful means of combating malaria There were eight admissions and one death from Malta fever returned in 1902 as compared with five admissions and no death in 1901, but *the Sanitary Commissioner* is sceptical as to the existence of this form of fever in India and as to the value of the serum reaction as a means of diagnosing it No serious attempt has, he says apparently been made in India to isolate the micrococcus Melitensis and the proof of the existence of this disease in India rests solely on the results of reactions obtained between cultures of the micrococcus and the serum of patients suffering from fever

The report deals very carefully with enteric fever, its etiology and causes pathology and varieties 17 pages being devoted to the subject and to passing in review and epitomising the additions real and alleged, that have been made to our knowledge in these respects as represented in the latest contributions to the literature of enteric fever A list of the numerous papers and books consulted and referred to is given at p 30 *et seq* It presents as usual a very useful and interesting part of the report but we have said so much upon the subject on previous occasions that there is no need to dwell upon it now

Section III deals with the native army of India and gives interesting and valuable information regarding the nature of the fevers *affecting native troops and prisoners* as compared with European troops It is well known that whereas statistical evidence shows clearly a very high death-rate from enteric fever among European soldiers in India it shows a very low one indeed from this fever in the native army and jail population of India. The fever statistics do not reflect, says the Sanitary Commissioner, the opinion so prominent of late that enteric fever is quite common among *adult* natives of India. Lest it should be thought that enteric fever when it occurs among natives is not correctly diagnosed, but is returned under some other heading, the Sanitary Commissioner significantly adds that whether we take the case of native troops or prisoners their mortality from all fevers is considerably below that of European troops from enteric fever alone.

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Printing India, 1903 Pp 115 + xx + 125. Price Rs. 3, or 4s 6d.

Passing on to Section IX. of the report there is some interesting and instructive information to be found under the heading of "General Remarks." From a health point of view, as well as from a political and spectacular aspect, the Coronation Durbar at Delhi was, as we know, a remarkable success and the brief reference thereto at p. 102 is worth reading. We have already referred to the subject of malaria in connexion with the experiments which were commenced at Mian Mir in 1902, and which have been carried on up to the date of the publication of this report. An excellent *résumé* of the literature of trypanosomiasis to be found, beginning at p. 108 of this section, to which we may call attention, and at p. 112 there is an interesting account of the discovery by Major W. B. Leishman, R.A.M.C., of an important parasite, together with its history and the work that has been done in connexion therewith.

INTERNATIONAL CONGRESS OF OTOLOGY.

THE seventh International Congress of Otology was held at Bordeaux from August 1st to 4th, the President being Dr. MOURE.

At the opening meeting the PRESIDENT delivered an address upon the History of Otology in France, commencing with the work of Duverney in 1683.

The Choice of a Simple and Practical Acoumetric Formula.

A joint report upon this subject was presented by Dr. POLITZER (Vienna), Dr. DELSAUX, and Dr. GRADENIGO (Turin), who form a permanent committee meeting once a year for studying the points still undecided. Dr. QUIX (Utrecht), Dr. PANSE (Dresden), Dr. TRÉTRÔP (Antwerp), and Dr. BONNIER (Paris) read papers on the same question.

The Diagnosis and Treatment of Suppuration of the Labyrinth.

Dr. BRIEGER (Breslau) said that the radical mastoid operation might lead to the spontaneous cure of a suppurating labyrinth, or, on the other hand, the suppuration, latent before, might become active after the operation and provoke fatal meningitis. He gave the indications, according to the present state of knowledge, for operation on the labyrinth and described the methods of procedure.

Dr. VON STEIN (Moscow) said that he distinguished cases according as the bony capsule, the perilymphatic space, the endolymphatic system, or the whole of the organ was affected.

Dr. J. DUNDAS GRANT (London) spoke of the relations of labyrinthitis to meningitis and to cerebellar abscess. He also discussed the symptoms and compared them with those of cerebellar abscess, with which it was possible also that a labyrinthine suppuration might co-exist.

Dr. POLITZER showed some preparations of morbid changes in the labyrinth in connexion with chronic suppurative otitis media.—Dr. PANSE, the PRESIDENT, and Dr. ESCAT (Toulouse) also made communications upon the subject.

The Technique of the Opening and After-treatment of Otogenous Cerebral Abscess.

Dr. KNAPP (New York) showed an instrument designed by Dr. Whiting (New York) for examining the walls of the abscess cavity. In the after-treatment the most serious troubles were hernia cerebri (which was caused by a secondary abscess) and secondary abscesses inside the cranium.

Dr. SCHMIEGELOW (Copenhagen) advised that the operation should be planned so as to make it possible to explore both the cerebrum and the cerebellum. The anæsthetic should be given with great caution owing to the risk of failure of respiration.

Dr. BOTEY (Barcelona) said that the operation ought always to be commenced by an exploration of the mastoid and the tympanum, passing thence to the intracranial cavity. He advised that in nearly all cases the brain should be punctured through the intact dura mater before incising the latter, in order to make certain of the existence of an abscess, for when the dura mater had been opened by a knife the brain and meninges were much more exposed to infection. He condemned irrigation of the abscess cavity and advised drainage by means of several small tubes.

Dr. GRADENIGO described a special form of intracranial complication with the following association of symptoms—acute otitis media, severe pain in the corresponding side of the head, especially in the temporo-parietal region, and later paralysis of the external rectus on the same side.

Sir WILLIAM MACEWEN (Glasgow) said that he treated the aural and cerebral foci and excised the morbid track between them; neglect of the latter precaution was a frequent cause of recurrences. He preferred chloroform as an anæsthetic rather than ether because the latter induced œdema of the brain. If after having incised the dura mater no adhesions were found in the subarachnoid space he waited 24 hours before incising the brain. After as free an incision as possible he irrigated with the greatest gentleness and used either no drain or at the most sometimes a strand of gauze.

Numerous other communications were made by various speakers, among whom Dr. BROECKAERT (Ghent) showed an ingenious syringe for injecting paraffin while cold; Dr. DENCH (New York) contributed a paper on the Radical Mastoid Operation; and Dr. GRADENIGO and Dr. POLITZER urged the necessity of making the study of otology a compulsory subject.

A small museum of pathological specimens, models, and instruments was arranged in one of the rooms at the School of Medicine where the Congress was held.

Public Health and Poor Law.

LOCAL GOVERNMENT BOARD.

ANNUAL REPORTS OF MEDICAL OFFICERS OF HEALTH.

The Borough of Preston.—The history of the isolation of small-pox in this borough during 1903 affords an instructive example of the risks which attend the use of "temporary" hospitals. In 1888–89 a temporary building was erected to cope with an epidemic of small-pox. It was afterwards taken down and stored away until 1893, when it was rebuilt upon its present site and again used in 1903. On Feb. 27th there occurred a gale which completely demolished the eastern wing which, by a happy circumstance, was unoccupied at the time. The remainder of the building was subsequently rendered more secure by props and other supports. There are other instances on record of disasters such as these, and we have heard of children suffering from diphtheria having to be taken from the hospital during a violent snowstorm and placed under a hedge until assistance could be secured. There can be no doubt that although these temporary structures have their advantages their ready destructibility by fire or storm renders them very unsuitable for the isolation of patients acutely ill or otherwise incapable of speedy removal. Two female health visitors were appointed at the beginning of 1903 and they have already done good work in dealing with the excessive infantile mortality for which Preston bears an unenviable notoriety. Mr. H. O. Pilkington, the medical officer of health, mentions the cases of mothers who have had 15, 12, 10, 9, 8, 6, and 5 children, and who have buried 8, 7, 5, 7, 7, 4, and 5 of their offspring under the age of 12 months. The reports of the female health visitors suggest that had the conditions of feeding and nursing of these children been better several of their lives might have been spared.

The Borough of Eastbourne.—The question of providing accommodation at the isolation hospital for cases of pulmonary tuberculosis was considered by the council of this borough during 1903, but after full consideration Dr. W. G. Willoughby, the medical officer of health, arrived at the conclusion that such a course would be undesirable. Dr. Willoughby thinks that it is not the proper function of a sanitary authority "to set up a second infirmary for the chronic and practically hopeless cases that now find their way into the union infirmary" Such cases should, he thinks, be dealt with by the guardi

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Willoughby thinks that even

the presence of consumptive patients might from a sentimental standpoint injure the present popularity of the institution The other objection which he raises seems to us to have even greater force—i e, that the consumptive patients would have a prejudice against the hospital from the fact that the acute exanthemata are treated there

Plympton St Mary Rural District—Mr S Noy Scott speaks appreciatively of the work of the Didworthy Sanatorium for Consumption which has recently been opened near Brent for the consumptive poor of Devonshire He does not, however, speak enthusiastically as to the results of sanatoriums generally As he observes, it is impossible to segregate into these institutions even a small proportion of the large number of persons who are suffering from pulmonary tuberculosis and it seems, he thinks, "almost foolish to expect that the isolation and treatment of a few of these people for a few months will produce any marked effect upon the prevalence of the disease or reduce the death rate in any way proportionate to the cost which such treatment involves" He sees, too, great difficulty in continuing to provide the discharged patient with anything approaching the abundant food which has formed such an essential part of the sanatorium treatment

The Borough of Torquay—A very useful and encouraging

ries, cowsheds, and milkshops in

by the late Mr P Q Karkeek,

health, and is continued by Dr Thomas Dunlop, his successor Twice yearly a systematic inspection is made, not only of the dairies and cowsheds in the borough, but also of all the dairy farms outside the borough limits which send their milk into the borough As an outcome of these inspections a register is compiled which is printed in the form of a bill and posted up throughout the town, copies being forwarded to all the dairymen and farmers concerned These bills, which may be regarded as a species of informal licence, are in force for six months, when another inspection takes place The farmers apparently welcome the inspections and endeavour to carry out the suggestions made, and a very material improvement in the former condition of affairs appears to have taken place But Dr Dunlop thinks that sufficient care is not taken in the milking of the cows and he states that when some of the milk is treated in a separator the sediment betrays signs of material of which the healthy udder is innocent Proper means for washing the hands of the milkers are rarely seen and the milkers do not wear overalls This is not satisfactory and we should like to see the facts stated on the bill The cow s udders and the milker's hands should be washed before the operation, the milk should be strained immediately after milking, and it should then be cooled All the utensils should be subsequently scalded or preferably steamed The Torquay methods are admirable so far as they go but we cannot help thinking that the informal licences in vogue may prove somewhat a false security if, that is to say, the bills which are posted are intended to imply freedom from the likelihood of specific contamination We hope that Dr Dunlop will continue to deal with this very important subject in his *future annual reports and that he will record annually the* further progress which he has been able to make The Torquay example might be usefully followed in other places

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS

IN 76 of the largest English towns 8896 births and 6639 deaths were registered during the week ending August 20th The annual rate of mortality in these towns, which had been 16·4, 19 8, and 22 1 per 1000 in the three preceding weeks, further rose last week to 22 7 per 1000. In London the death rate was 21 6 per 1000, while it averaged 23·2 in the 75 other large towns The lowest death rates in these towns were 7·8 in King's Norton, 9 6 in Handsworth (Staffs), 10 5 in West Hartlepool, 10 7 in Blackburn, 11·8 in Hastings and in Devonport, 12 0 in Burton-on-Trent, and 12·1 in Bournemouth; while the highest rates were 31 0 in Hanley, 31·4 in Tynemouth, 31·8 in St. Helens, 32 1 in Salford, 32 3 in Tottenham, 33 4 in York, 34 0 in Wigan, 34 6 in Bootle, and 39·1 in Liverpool The 6639 deaths in these towns last week included 2842 which were referred *to the principal infectious diseases*, against 1255, 2059, and 2710 in the three preceding weeks, of these 2842 deaths, 2538 resulted from diarrhœa, 130 from measles, 79 from whooping cough, 39 from diphtheria, 30 from "fever" (principally enteric), and 26 from scarlet fever, but not any from small-pox The lowest death-rates last week from these principal infectious diseases were recorded in Hastings, Bournemouth, Devonport, Burton on-Trent, King's Norton, Stockton on-Tees, West Hartlepool, and South Shields, and the highest rates in Tottenham, East Ham, Grimsby, Birkenhead, Liverpool, Bootle, York, Hull, and Rhondda The greatest proportional mortality from measles occurred in Blackburn, Huddersfield, Halifax, Bradford, and Rhondda, and from diarrhœa in Tottenham, West Ham, East Ham, Leyton, Reading, Grimsby, Liverpool, Bootle, Wigan, York, and Hull The mortality from each of the other principal infectious diseases showed no marked excess in any of the large towns; and no fatal case of small pox was recorded either in London or in any of the 75 large provincial towns The number of small pox patients under treatment in the Metropolitan Asylums hospitals, which had been 46, 32, and 21 at the end of the three preceding weeks, had further declined to 18 at the end of last week, two new cases were admitted during the week, against seven, two, and none in the three preceding weeks The number of scarlet fever cases in these hospitals and in the London Fever Hospital on Saturday *last, August 20th, was 1745, against 1784, 1758, and 1763* on the three preceding Saturdays; 198 new cases were admitted during the week, against 243, 166, and 189 in the three preceding weeks The deaths in London referred to pneumonia and diseases of the respiratory system, which had been 118, 112, and 121 in the three preceding weeks, declined again last week to 106, and were 14 below the number in the corresponding period of last year. The causes of 39, or 0 6 per cent, of the deaths in the 76 towns last week were not certified either by a registered medical practitioner or by a coroner All the causes of death were duly certified in West Ham, Bristol, Salford, Bradford, Leeds, Newcastle on Tyne, and in 49 other smaller towns; while the largest proportions of uncertified deaths were registered in Liverpool, St Helens, Manchester, Halifax, South Shields, Gateshead, and Tynemouth.

HEALTH OF SCOTCH TOWNS

The annual rate of mortality in eight of the principal Scotch towns, which had been 14 1, 14·6, and 15 7 per 1000 in the three preceding weeks, further rose to 17 1 per 1000 during the week ending August 20th, but was 5·6 per 1000 below the mean rate during the same period in the 76 large English towns The rates in the eight Scotch towns ranged from 7 8 in Leith and 12 3 in Perth, to 20 2 in Greenock, and 21 1 in Paisley. The 567 deaths in these *towns included 66 which were* referred to *diarrhœa*, 16 to whooping cough, seven to measles, four to scarlet fever, and one to diphtheria, but not any to small pox or to "fever" In all, 94 deaths resulted from these principal infectious diseases last week, against 58, 85, and 109 in the three preceding weeks These 94 deaths were equal to an annual rate of 2 8 per 1000, which was 6 9 per 1000 below the *mean rate last week from the same diseases* in the 76 large English towns The fatal cases of diarrhœa, which had been 24, 48, and 63 in the three preceding weeks, declined again last week to 66, of which 44 were registered in Glasgow, five in Aberdeen, five in Leith, four in Edinburgh, four in Dundee, and three in Paisley The deaths from whooping-cough, which had been 26 in each of the two preceding weeks, *decreased to* 16 last week, and included 11 in Glasgow and two in Dundee The fatal cases of measles, which had been seven, five, and six in the three preceding weeks, rose again last week to seven, of which three occurred in Glasgow. The deaths from scarlet fever, which had been two, one, and two in the three preceding weeks, further rose to four last week, and included *two in Edinburgh* *The deaths referred* to diseases of the respiratory organs in these towns, which had been 55, 47, and 39 in the three preceding weeks, rose again last week to 47, but were slightly below the number in the corresponding period of last year. The causes of

22, or nearly 4 per cent., of the deaths registered in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 17·9, 21·2, and 27·1 per 1000 in the three preceding weeks, declined again to 24·5 per 1000 during the week ending August 20th. During the past four weeks the death-rate has averaged 22·7 per 1000, the rates during the same period being 19·7 in London and 14·2 in Edinburgh. The 178 deaths of persons belonging to Dublin registered during the week under notice showed a decline of 18 from the number in the preceding week and included 43 which were referred to the principal infectious diseases, against 13, 25, and 46 in the three preceding weeks; of these, 33 resulted from diarrhœa, four from measles, three from whooping-cough, two from "fever," and one from diphtheria, but not any from either small-pox or scarlet fever. These 43 deaths were equal to an annual rate of 5·9 per 1000, the death-rates last week from the principal infectious diseases being 8·8 in London and 1·4 in Edinburgh. The 33 fatal cases of diarrhœa corresponded with the number in the preceding week. The deaths from measles, which had been four, three, and five in the three preceding weeks, declined again last week to four. The fatal cases of whooping-cough, which had been four in each of the two preceding weeks, decreased last week to three. The 178 deaths in Dublin last week included 60 among children under one year of age and 27 among persons aged 60 years and upwards; the deaths both of infants and of elderly persons showed a decline from the number in the preceding week. Seven inquest cases and four deaths from violence were registered; and 57, or nearly a third, of the deaths occurred in public institutions. The causes of nine, or more than 5 per cent., of the deaths in Dublin last week were not certified.

THE SERVICES.

Royal Navy Medical Service.

The following appointment is notified:—Staff Surgeon C. S. Facey to the *President*, for three months' hospital study.

Royal Army Medical Corps.

Captain J. H. Campbell, D.S.O., has arrived at the Station Hospital, Western Heights, Dover, and Captain S. H. Fairrie has arrived at the Station Hospital, Canterbury, both for duty.

Army Medical Reserve of Officers.

Surgeon-Major W. M. Roocroft to be Surgeon-Lieutenant-Colonel (dated August 2nd, 1904).

Volunteer Corps.

Rifle: 2nd Volunteer Battalion the King's (Shropshire Light Infantry): Surgeon-Captain G. Hollies to be Surgeon-Major (dated August 20th, 1904). 1st Volunteer Battalion the Manchester Regiment: Surgeon-Major W. M. Roocroft to be Surgeon-Lieutenant-Colonel (dated August 20th, 1904).

Deaths in the Services.

Surgeon-Major-General Alfred Malpas Tippetts, A.M.D. (retired), recently at Southsea. He joined the army in 1854, became surgeon in 1864, surgeon-major in 1879, deputy surgeon-general in 1880, and surgeon-general in 1891. He served in the Eastern Campaign, 1854–55, with the 7th Fusiliers, including the affair of Bulganac, battles of Alma and Inkerman, and siege of Sebastopol (medal with three clasps and Turkish medal); served in the Afghan war of 1878–80, and took part in the expeditions into Bazar and Hisarik Valleys (medal). He retired with the rank of surgeon-major-general in 1892. A Distinguished Service Reward of £100 a year falls vacant by the death of Surgeon-General Tippetts.

Inspector-General Dugald M'Ewan, H.P.K., R.N. (retired), on the 22nd inst., at Bedford. He reached the rank of inspector-general in 1887.

The Retirement of Lieutenant-Colonel A. F. S. Clarke, A.M.S.

The retirement of Lieutenant-Colonel A. F. S. Clarke, Army Medical Staff, from the post of surgeon of the Royal Military College, which he vacates on account of his having reached the age limit, is a matter calling for some notice on our part. During the time he has held the appointment he has been devoted to his work and to the interest of the college and all concerned therewith. The post is a difficult and responsible one to fill but Colonel Clarke is an officer of sound judgment with a knowledge of the work he had to do, as well as great kindliness and absolute honesty in the doing of it.

The War in the Far East.

The news from the seat of war—such as there is—is of military and not of a medical nature. Beyond the fact that a fierce conflict is raging round Port Arthur and that the garrison of that strong fortress is being hardly pressed we really know but little of what is actually taking place there at the present time. As regards the progress of the war in Manchuria the heavy rains have for the moment put an end to military operations. The rumour is that there is much inefficiency from sickness among the Russian troops under the command of General Kuropatkin.

Correspondence.

"Audi alteram partem."

HOT WEATHER AND FOOD PRESERVATIVES.

To the Editors of The Lancet.

Sirs,—The wave of exceptionally hot weather that has recently visited this country has been followed by the usual epidemic of infantile diarrhœa and the mortality in all the great centres of population has risen in consequence, Liverpool heading the list with a death-rate of 37·7 per 1000. In the conditions under which multitudes of the poor live it is not a matter for surprise that diarrhœa due to the consumption of decomposing food should be extremely prevalent. Even in the houses of the well-to-do it has been difficult to keep milk, fresh meat, and fresh butter in a condition fit for consumption for more than a few hours and some of it has often had to be thrown away as not above suspicion. In the slum dwellings of our great cities the difficulty of keeping fresh food in a state fit for consumption must be well-nigh insurmountable. The air of the overcrowded rooms reeks with organic emanations from the bodies and clothes of the inhabitants; water has to be fetched from a standpipe outside and is used sparingly; there are no relays of dishes or other receptacles to hold the food, such receptacles as exist are dirty; there is nothing to keep off the flies, and when food goes bad the family must eat it or do without any. These conditions are not peculiar to Liverpool but are met with in all large cities, but there is one circumstance about Liverpool which I think explains, in part at least, their disastrous influence on the health of the children there during the last few weeks. For some years past the authorities in Liverpool have been carrying on a crusade against the use of boric acid and salicylic acid as preservatives in food and I am of opinion that the success of the authorities in putting a stop to the use of preservatives has laid the public open to serious risks from poisoning from decomposing food. Some months ago, when discussing the question of preservatives with an official who was strongly opposed to their use on the ground, as he alleged, that by sterilisation the food could always be delivered to the consumer in good condition, I asked him how it was to be kept from going bad directly it was opened. His answer was that the officials had nothing to do with the food after it had reached the hands of the consumer, that the only business of the officials was to see that the consumer got it pure, which meant in this connexion free from preservatives. This view may satisfy the official mind but it is not sense. I have more than once invited the opponents of the use of preservatives to bring forward a single instance in which any human being has suffered from the reasonable use of boric acid or salicylic acid as preservatives in food, but they have not brought forward a single case that would bear investigation. The objections to their use are purely hypothetical, chiefly resting upon feeding experiments on young animals which have been wrongly interpreted. On the other hand, no one seriously disputes the danger of consuming food even in an early stage of decomposition and I assert without fear of contradiction that in the conditions under which the poor live in our large cities their food is certain to undergo rapid decomposition in hot weather unless preservatives are employed I am, Sirs, yours faithfully,

THOS R BRADSHAW, B A, M D Dub, F R C P Lond,
Physician to the Liverpool Royal Infirmary
August 21st, 1904

THE AMALGAMATION OF THE LONDON ORTHOPÆDIC HOSPITALS

To the Editors of THE LANCET.

SIRS,—As one of the governors of the City Orthopædic Hospital by whose vote it was decided to refuse to incorporate with the two other orthopædic hospitals, I think it only right to state our reasons for this refusal and I think that when they have been considered the action of the Hospital Sunday Fund committee in refusing the usual grant to this most deserving institution for the purpose of coercing them will appear most unjustifiable The City Orthopædic Hospital is worked at very small cost for administration and nearly the whole of the money subscribed goes to the patients It is on a freehold site in one of the most accessible spots for the poorer inhabitants of London, it can be reached by a 1*d* omnibus fare or 1*d* railway fare from all the poorer districts of London It treats a class of disease to which the poor are particularly subject
I
the three orthopœdic hos
t immense cost on a lease
[illegible] London, thus taking it too far away from the poor districts and spending a very large sum on bricks and mortar, which is at present available for relieving the very great sufferings of the people The proceeding would increase the administrative expenses much out of proportion to the good to be derived from the amalgamation I think that pressure must have been brought to bear in some way to prevent the usual grant, as I cannot understand anyone who has gone into the matter fairly refusing funds to so deserving a charity as ours I feel sure that it is only necessary for anyone to visit this institution, which is situated in Hatton garden, to see how carefully the committee have husbanded their resources and the very kind way in which the poor little sufferers are treated to insure plenty of donations and subscriptions to carry on this most humane work without the aid of the Hospital Sunday Fund committee I am, Sirs, yours faithfully,

Sydenham, August 18th 1904 JAMES A PHILLIPS

DOES BOILING IMPROVE THE KEEPING PROPERTIES OF MILK?

To the Editors of THE LANCET

SIRS —To most practitioners I apprehend that the boiling of milk at this season of the year for the purpose of "keeping it sweet" is an axiom of practice which I had always suspected admitted of no doubt Recently however a friend of mine, a bacteriologist vigorously attacked my instruction to boil milk 'Why" he asked, "do you boil the milk? I replied first at this season of the year to prevent souring and decomposition, secondly to destroy pathogenic germs, thirdly, it is said to make the milk more digestible, and lastly, if the child has diarrhœa it is to help to constipate the child

Now, does boiling the milk have a good effect on its keeping properties, especially under the contaminating influences of hot weather? I have always thought so, but my friend roundly declares that it is absolutely harmful, and for these reasons First, he says that I confuse souring with decomposition or putrefaction The one is due to lactic acid fermentation, the other to changes set up by dirt organisms or the organism of putrefaction, two altogether different processes and mutually antagonistic When we set about boiling the milk we destroy the lactic acid organisms, which die, say, at or about a temperature of 180°, while the dirt organisms, which are spore bearing, are at that temperature quite unharmed What then, is the result? The milk is certainly, by the act of heating, prevented from souring and to outward appearances keeps good, but if it is kept for a few hours—probably all night—at the temperature of the room or flat, say at or above 80°, putrefaction has full opportunity of taking place under the most advantageous circumstances and toxic agents are developed in the milk which are much more pernicious than the souring Souring is such a visible process that it is unmistakable but, on the other hand, these invisible toxic agents give no evidence of their existence, either in taste or smell (possibly in some instances the milk may become slightly sweeter), by which they can be recognised and these products, my friend declares, are often the deleterious substances which give rise to the fearfully sudden collapse in some infants about whose feeding the mothers have been more than usually careful by taking pains to boil the milk before using it My bacteriological friend goes so far as to say that sour milk in itself is *not* harmful! This statement reminds me that in my native county basins of sour milk were eaten with avidity, mixed with the coarse brown sugar of olden days or with treacle, by the farm hands on many of the farms I have stayed at in the days of my youth He urges strongly that the lactic acid fermentation is actually nature's own means of preventing the process of putrefaction owing to the fact that most of the putrefactive germs require an alkaline or neutral medium for their development and that this is impossible as long as the lactic acid germs are allowed to exert their influence, but directly we set about killing these by boiling we immediately give the putrefactive germs full scope to develop and this by the very means which we in our ignorance of nature's processes had hoped would be effective in the opposite direction

I am, Sirs, yours faithfully,
RICHARD BEVAN, L R C P Lond, D P H
Kensington August 5th 1904

⁂ Boiling must obviously delay decomposition by destroying germs but the effect, of course, can only be temporary if the milk is afterwards allowed to cool down exposed to the air The destruction of pathogenic organisms is more likely to be effectually done by heating than by waiting for the development of lactic acid —ED L

PREVENTION OF PUERPERAL FEVER

To the Editors of THE LANCET

SIRS —The paper written by Professor Byers on this subject leads one to think furiously For years past the members of the medical profession have listened to very tall talk from obstetricians and we are still to listen A little incident occurred at Oxford at a discussion in the obstetrical section upon the treatment of accidental hæmorrhage which I trust will tend to make our obstetrical professors also consider *Professor Galabin informed his* audience that he had been in favour of the treatment of vaginal plugging and was so at that moment, that he advocated this method in early editions of his little book for students but that he had omitted to do so in later editions because he found that his students complained that they failed to pass examinations for stating that this was the method which in practice they would adopt The method in question, I may perhaps be allowed to state is that which was taught by those great authorities Dr Rigby and Dr Matthews Duncan It was strange to find that the reintroduction of the method has been necessary

I shall be glad to hear in what proportion of the reports written by medical officers of health annually is attention called to excessive puerperal mortality If
any accurate apprec
ordinary working acc
some attention must l
obtain in those parts
is high So far as my limited lights allow me to form an opinion the prevalence of puerperal sepsis—or indeed surgical sepsis—depends first upon the sound grounding of students in first principles by the teacher, secondly, upon
nd thirdly, upon the
it when he becomes a
period since Hughes
Bennet introduced the speculum and passing in review the various teaching concerning the so-called congestions and ulcerations of the cervix, concerning the use of pessaries, concerning operative interferences with women for disease not connected with pregnancy, and concerning operative interference with the various complications connected with pregnancy and childbirth, it is impossible to assert that the teachers of the third compulsory branch of professional

said: "I must ask you to be careful and remember that you come here as an expert witness. If a man falls as a result of slipping upon a piece of banana skin, do you, as a medical man, say that indicates a dangerous condition of the brain?" To this inquiry the witness replied: "Taken in connexion with the sprained thumb I think it would." After evidence from Professor R. Saundby, who, whilst refusing to go so far as the last witness, was of opinion that the accidents should have been disclosed, the Lord Chief Justice in summing up said that a policy of insurance depended upon absolute good faith upon both sides. What the jury had to decide was whether the questions had been answered correctly by the deceased. In considering whether the two occurrences in question were accidents they should not pay much attention to the fact that the deceased described them as such to the accident insurance company, since he could not well have described them as anything else. If they thought that the information as to the injured knee and the sprained thumb was the sort of information that the questions submitted on the paper of application were intended to elicit, then they must come to the conclusion that they were incorrectly answered. The jury found that all the questions were correctly answered.

Health of the City.

The epidemic of diarrhœa which visits the city at this time of year has put in its appearance with the hot weather and an abundant fruit-supply. In the week ending July 23rd there were 27 deaths from diarrhœa; in the following week 76, and in the third week 98. This increased the death-rate to 23·3 per 1000. The zymotic death-rate rose in the same time from 8·5 to 10·8.

The Sewage of Hanley.

Dr. George Reid, medical officer of health of Staffordshire, has presented to the sanitary committee of his county council a report on certain experiments in connexion with sewage which have been going on at Hanley for the past two years. Works were constructed for treating one-sixth of the dry-weather flow of the sewage of Hanley on biological lines, the object being to determine by experiments on a large scale whether septic tank treatment followed by single filtration would yield satisfactory results with the sewage in question, and whether the process could be conducted on the site of the present outfall works, which is at no great distance from a populous part of the borough. For many years past, and at the present time, the method of disposal has been by chemical precipitation followed by land treatment. The land available, however, is very ill suited for the purpose and the area is altogether inadequate. It has become clear that the idea of continuing land treatment must be given up if the present outfall is to be retained. Mr. Scott-Moncrieff designed a piece of apparatus for the distribution of the tank effluent upon a circular filter, and Mr. Wilcox designed a mechanical distributor which was fixed in connexion with a rectangular filter. Both of these pieces of apparatus have been at work during the whole time that the experiments have been in progress. The area of the experimental filters amounts to half an acre, one quarter of an acre being given to each shape of filter. In both cases a depth of 4 feet 6 inches of filtering material was used. This material was broken "saggers," a waste material which is to be had in any quantity in North Staffordshire. The filters were divided into sections in each of which the particles were of different sizes and the effluent pipes were so fixed as to allow of samples being separately collected from each section. This was done with a view of ascertaining which size of particle was the best adapted for the purpose. The filters have now been in operation for some 18 months. A constant and regular flow of 200 gallons per superficial yard was obtained from the circular filter. The flow from the rectangular filter was not so large nor so constant. It varied from 130 to 200 gallons, the mean having been 162 gallons. After tabulating the results of the analyses of the sewage and of the effluents in respect of the various filters Dr. Reid proceeds to state that the conclusion to be drawn from the figures is that in every case the degree of purification which has been effected is excellent. The good quality of the work done exceeds that of any plant of which he has had any experience, neither did he know of any published records from similar works which would approach those of Hanley as regarded the degree of purification effected. Treatment in the "septic" tank effected a purification of 64 per cent. and 62 per cent. in the organic ammonia and oxygen absorbed respectively, whilst as regards the filter effluents these percentages varied from 94 per cent. and 91 per cent. in the case of the large grain section of the circular filter to 97 per cent. and 94 per cent. in the case of the finest grain section, the last-named figures being practically the same in the corresponding section of both filters. As regarded the degree of purification effected, the results were practically the same in corresponding sections of both filters. With reference to the routine working of the filters, with the exception of a temporary water-logging of the large grain section of the circular filter (1½ inches to ½ inch fragments), an occurrence which was corrected by a short period of rest, no trouble was experienced. In conclusion, Dr. Reid states that the working of the preliminary plant has exceeded his highest expectations, and he is of opinion that the Hanley corporation might with confidence proceed to lay down, on similar lines, a plant of sufficient capacity to deal with the whole of the sewage of the borough.

August 23rd.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

The Prevalence of Diarrhœa and its Causes; Discussion at the Health Committee; High Rate of Mortality.

AT the meeting of the health committee held on August 18th attention was drawn to the prevalence of diarrhœa and the high death-rate of the city for the past two weeks, which had reached 37·7 per 1000. Dr. E. W. Hope pointed out that, in regard to the causes of diarrhœa, it occurred at a certain season—namely, the season of decay, when food became rapidly putrescent. In turn in every town in the civilised world there was at that season an enormous destruction of infant life, but it was almost entirely confined to those whose mothers, from one cause or another, did not suckle the infants. Dr. Hope said that the returns from Birmingham, Aston, York, and other places also showed a high rate of mortality but the causes did not operate in every town at the same time. Many circumstances did not coincide to make the rate uniform every week. Unfortunately, for two weeks Liverpool had been at the top but other places followed closely with 36. 35, 32, &c., per 1000. The high death-rate had happened only for two weeks in Liverpool and he thought it was an encouraging thing that such a rate was so rare that it was seized upon now and made the subject of a great deal of conjecture. He was sorry to see a somewhat wrong impression created. The rate last year and right up to July of this year was about 19 per 1000, taking the whole period. They knew that they could not go on with such a low rate. The birth-rate in Liverpool was much higher than in the majority of places and thus they had a much larger infant and susceptible population. The high death-rate would probably continue for a week or two, possibly to the end of September. There was no royal or magic road to stop the disease. The proper course was to adopt Nature's methods; if her methods were set aside she would have her revenge. The supplying of sterilised milk, which had been copied from France, had given most promising results. Next to mother's milk it was the best food for infants, but the difficulty was that as there were thousands of mothers who could not suckle their children so there were thousands who would not give them sterilised milk. As regards the prevalence of scarlet fever and typhoid fever Liverpool occupied a relatively satisfactory position.

Beri-beri in Liverpool.

A Norwegian barque, the *Sunniva*, arrived in the Mersey on the morning of August 18th, from Cuba, with five cases of beri-beri on board. The patients are Norwegians. The sanitary authorities, taking the matter in hand, had four of the men placed in the tropical diseases ward of the Royal Southern Hospital, which possesses an admirable equipment for observing and dealing with such cases. Two of the men are suffering severely from the disease. Leaving Algoa Bay as early as March the vessel, with the sufferers on board, reached Santa Cruz, Cuba, in May. Thence they set out for the Mersey, which was reached, as stated, on August 18th.

Lancashire County Council; Registration of Midwives; University Grants.

The midwives committee of the Lancashire county council reported that certificates had now been granted to 457 midwives out of 524 who had applied It was recommended that as the regulations were very stringent and so many of the women were illiterate a trained obstetric nurse should be appointed as inspector of midwives at a salary of £104 a year The council has increased its grant of £500 to the University of Liverpool to £1000

August 23rd

IRELAND

(FROM OUR OWN CORRESPONDENTS)

National Veterinary Association

THE members of the National Veterinary Association opened their ust 15th in the lecture theatre where they were received by Mr e President, who welcomed them on behalf of the Royal Dublin Society The President of the association, Mr Clarke Allen, delivered an interesting address in which he alluded to the fact that since they last met in Dublin four years ago Professor Koch had startled the world by stating that tuberculosis of the lower animals was not the same as tuberculosis in man and that the one could not be transmitted to the other The interim report of the commission which was appointed to investigate the question and of which a very distinguished Vice President of their association, Professor D J Cunningham was a member, did not support the view of the great German scientist The members of the veterinary profession had good reason to doubt its truth and were aware of the loss of valued colleagues from tuberculosis with which they were accidentally inoculated while making post mortem examinations

Infantile Mortality in Dublin

At the meeting of the public health committee held on August 16th the death rate for the previous week was reported to be 28 1 per 1000 and of this large mortality no less than five deaths in every thousand were due to diarrhœa Sir Charles Cameron said that he was issuing a circular setting out what precautions should be taken to reduce the mortality from this cause Professor Antony Roche addressed a letter to the papers on August 18th in which he described the method adopted by the Liverpool sanitary authorities in connexion with the matter Depôts were established throughout that city where parents could obtain pure milk for infants supplied in small separate bottles As appeared in the last report of the Liverpool medical officer of health this had the effect of diminishing the infantile death rate from diarrhœa The council of the Dublin Sanitary Association attention to the fact that deaths in this city during the six, five, 15, and 33 respectively, and mentioned the well established fact that when the subsoil temperature at a depth of four feet below the surface reaches 56° F diarrhœic affections become prevalent each summer

Small pox in Dublin

No new cases of small pox have been reported in Dublin and the three patients in the isolation hospital are convalescent All the members of the Royal Irish Constabulary stationed at the Dublin depôt who have not been vaccinated within the last two years are now having that operation performed by order of the authorities

The Belfast Board of Guardians

The proceedings at the last meeting of the Belfast board of guardians tend to bring popular representative government into contempt, the lively discussion general wrangling "disorder' interruptions" 'uproarious scene of excitement' 'uproar and "low personal remarks,' as reported in the daily papers of August 17th being a disgrace to any body of individuals who are supposed to have charge of the poor The whole fa question of a proposed be admitted that a lette in Dublin had the effect outset of the meeting two inspectors of the Local Government Board held a public inquiry some considerable time ago (in December, 1903) in reference to the suitability of a place known as the Abbey in the neighbourhood of Belfast, which the guardians wished to acquire as a consumptive sanatorium These inspectors have already reported and now the Local Government Board writes, after all the correspondence and the inquiry that if the guardians are prepared after full consideration, to place a definite scheme before it and if they are satisfied that the Abbey is the most suitable site for their purposes the Board will be ready to give its decision on learning fully the guardians views Evidently the Local Government Board is unable to make up its mind on the question and wanted to know if the guardians were in the same state, and the discussion which ensued showed that the guardians are so divided in their views The matter was finally referred to the infirmary committee While an immense deal of public time was being wasted in unseemly discussion matters requiring serious attention were being neglected As an example, a report from the works committee revealed a serious state of affairs in the children's infirmary, for Miss Ward, the lady superintendent reported that "the patients in the children's infirmary are infested with vermin, and owing to the walls and woodwork it is impossible to keep the beds free from these pests The beds in use are old and so constructed that insects get into crevices at the joints The members of the works committee not only confirm these statements but say that during their inspection of this department they observed a loose board on the ground floor and on lifting it there was some sewage matter lying beneath it When it is considered that this is the state of an institution over which the guardians who wrangle at length on personal matters are the responsible authorities it is little wonder that some people think that the Local Government Board should dissolve the Belfast board of guardians and appoint two or three paid officials to manage the workhouse

Small pox in the North of Ireland

It is to be regretted that small pox continues to spread throughout Ulster At Monaghan attention was drawn at a meeting of the guardians on August 22nd to the part played by the professional tramp in spreading the disease, especially those coming from places like Armagh and Clones where the epidemic is prevailing If tramps were dealt with as the "work shys are treated in Switzerland the nuisance which is present all over Ireland would gradually cease In Switzerland able bodied vagrants are arrested and sent to a home of correction where they are forced to labour or to a farm where they must keep pace with the voluntary worker There are 21 cases of small pox in Armagh where there is not adequate accommodation in the view of the Local Government Board, which recommends that instead of cases being treated in the fever hospital (which is close to the infirmary) an additional shed should be erected to accommodate, say, 30 patients The fever hospital should be cleared of the small pox cases and thoroughly disinfected and reserved for other forms of fever At present the enteric fever cases are being treated in the infirmary wards reserved for consumptives and there is no accommodation for the "contacts' The Newry guardians on Sept 3rd are to consider how they will arrange to accommodate small pox cases should the disease appear in their area Enniskillen and Omagh are also making preparations

Increase of Dispensary Medical Officers Salaries

The Banbridge board of guardians at its meeting on August 22nd decided to increase the salary of Dr W J Cowden of Dromore from £80 to £110 per annum and that of Dr J Taylor of Tanderagee from £100 to £120 per annum Dr Cowden has had a service of five and Dr Taylor of 25 years

The Belfast Maternity Hospital

The new Belfast Maternity Hospital which will be of so much value to the medical school, is to be opened in November by the Countess Grosvenor, wife of the Chief Secretary for Ireland

August 23rd

PARIS

(FROM OUR OWN CORRESPONDENT)

The New Nursing School

THE first school for sick nurses which is open to all classes, has just been opened in Paris The scheme was initiated by Madame Allegret the head of the École for girls at Versailles and Madame Alphen Salvador The school includes a hospital of 20 beds and as many private rooms In consideration of a fee of 600 francs per annum, payable quarterly in advance and guaranteed by the relatives of the pupils, the school takes such pupils completely under its charge, boards them, lodges them, and gives them full instruction both theoretical and practical. The practical instruction is given daily at the bedside of the patients in the hospital attached to the school and when the pupils are not on duty here they go from nine o'clock till 12 to the various hospitals in Paris so as to familiarise themselves with the nursing of all kinds of diseases. Lectures are given every day from five to six o'clock and include the subjects of anatomy, physiology, general and professional hygiene, minor surgery, massage, general medicine, diseases of children, the nursing of patients suffering from cutaneous diseases, the elements of pharmacy and professional etiquette (*devoirs*). The first year is a year of probation and if the pupil finds the work suits her she undergoes at the end of her first year an examination, after which she begins the second year of her studies and signs an agreement to serve the administration for four years. At the end of the second year she receives her diploma of assistant and from that moment begins the exercise of her profession. The school pays her 1200 francs per annum and this salary increases by 100 francs every three years, that is to say, at each renewal of the agreement. The school pays the salary whether the nurse is at work or not and when a nurse is sent to look after a patient in a private family the conditions of her stay are regulated by the work which she has to do and the administration receives the report of her work but she herself is prohibited from taking any fee. In return for this the school pays all the expenses of the pupils. If a pupil wishes to break her agreement during the three years to which it refers she must pay an indemnity which varies from 250 to 1000 francs. Uniform is a necessity. When attending on a patient the uniform is of pink cotton. When going about a town the uniform consists of a dark blue woollen dress with linen collar and cuffs.

Tobacco and the Sense of Hearing.

At the Congress of Otology at Bordeaux M. Delie read a paper upon Tobacco and the Auditory Sense. Tobacco, he said, exercises a direct and selective action upon the auditory nerve and nicotine brings about circulatory troubles, owing to its exciting action upon the great sympathetic. It also gives rise to, or stimulates, a trophoneurosis which ends in neuritis of the auditory nerve. Tobacco should be used in moderation and practitioners should warn patients in whom there is already auditory trouble that its action is specially harmful in their case. In persons who are already suffering from arterio-sclerosis or who have a family history of such a condition it ought to be forbidden, and all the more if they are comparatively young.

Should a Medical Man Recommend a Pharmaceutical Chemist?

The question has recently come up as to whether a medical man has the right to recommend a particular pharmaceutical chemist to his patients for making up prescriptions. The Tribunal of the Seine has already given judgment on this point and it is as well to recall the judgment now that the matter is being discussed afresh. The court declared that it is the business of the medical man to ascertain that the drugs which he orders are supplied in an active condition. If he knows that any particular pharmaceutical chemist sends out defective medicines he can—nay, should—recommend his patients to go to another pharmacy for their medicine. As this judgment did not please the particular pharmaceutical chemist to whom it referred the Court of Appeal was applied to and this court simply confirmed the judgment of the court below.

The Poison of the Bee.

At the meeting of the Academy of Sciences which was held on July 25th M. Phisalix read a paper giving the results of some researches which he had carried out upon the poison of the bee. He stated that sparrows form very delicate physiological tests for this poison. If a sparrow be stung in the pectoral region by two or three bees symptoms of poisoning supervene in five minutes at the latest. The earliest symptom is general and progressive weakening of motor power, the bird sinking down on its feet; if it tries to fly it almost immediately falls. The paresis gradually increases until all that the bird can do is to flutter along, scraping the ground, it oscillates, and its movements are incoördinate. Then follows a generalised and increasing tremor—in fact, a regular chorea (*danse de Saint Guidans*), in which the muscles of the feet, the head, the wings, and the eyes are all affected. Respiration gradually fails and the bird opens its beak as if gasping for breath. Intelligence is not affected and the bird will defend itself with both beak and claws, but towards the end the chorea is frequently interrupted by periods of somnolence. The paralysis increases and the bird dies in two or three hours from respiratory failure, though the heart goes on beating for some minutes after the respiration stops. Post-mortem examination shows that the blood in the heart is black and coagulates rapidly, while the area of the stings in the pectoral muscles is of a light yellow colour due to commencing mortification. If a solution of the venom be made it can be analysed physiologically and as inoculated by the bee it is found to contain three principles—one convulsive, one stupefying, and one which gives rise to acute inflammation (*phlogogine*). The existence in the poison of an insect of two poisons directly opposed to one another is a newly discovered fact which may be compared with the observations of M. Bouchard upon the poisons of urine.

X Rays and Constipation.

At the congress for the furthering of science which was held at Grenoble from August 4th to 11th M. Albert Weil read a paper upon the results of some observations which he had made as to the application of the x rays upon a limited area of the abdomen. He used as strong an application of the rays as the skin could support without injury and he found that when this treatment was repeated twice or thrice a week it had an action upon the intestines which allayed spasms and produced healthy motions in patients who had hitherto been unaffected by every kind of medication.

Obituary.

Dr. Dureau, the librarian of the Academy of Medicine, Chevalier of the Legion of Honour, died on August 12th, universally regretted.

August 23rd.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Serum Treatment of Puerperal Septicæmia.

AT a recent meeting of the Berlin Medical Society Professor Bumm read a paper on the Serum Treatment of Puerperal Septicæmia. He said that there was a difficulty in making a proper estimate of the action of the serum and that recoveries might be attributed to nature as well as to the serum treatment. He has used Marmorek's, Menzer's, and Aronson's serum, the result being as follows. Streptococcic puerperal peritonitis: five cases were treated by injections of great quantities of serum without success. Genuine septicæmia: in two cases the serum had not the least effect, one case in which great masses of streptococci were present in the blood recovered after three injections, while two cases complicated by endocarditis were not influenced. Pyæmia: no effect was produced by the serum. Streptococcic endometritis: of 35 cases five died, nine recovered without a manifest action of the serum, and in 21 the injection produced an immediate decrease of the temperature together with an improvement in the patient's general state. Although the advantages of serum treatment were very doubtful it was at least harmless and Dr. Bumm recommended that it should be tried in severe cases. In recent cases without general infection it should always be used. Prophylactic injections should also be given with a view to prevent cases from becoming septic.

The Waldschule of Charlottenburg.

According to an article published in the *Vossische Zeitung* a so-called "forest-school" (Waldschule) was opened on August 1st by the municipal authorities of Charlottenburg, a suburb of Berlin. This institution is a new departure in school hygiene. It was found long ago by school teachers that a good many children fell behind in the ordinary schools because they were anæmic, badly fed, and neurasthenic, although not suffering from any definite illness. In certain towns, Nauheim, for instance, special classes limited to a comparatively small number of pupils have been formed for such children and in these classes great attention is paid to hygienic measures such as bathing and to the reduction of school hours. Another plan was suggested some years ago by Professor Baginski, the well-known specialist for the diseases of children; he advised the Berlin school authorities to establish "internats" in the neighbourhood of Berlin, where children suffering as above mentioned would live in the country, but his proposal was not adopted as it would have involved an enormous expense. The new system of the Charlottenburg Waldschule differs from that plan as the children and teachers stay there only during the day and return home in the evening, as is the case in the so-called Erholungsstätten for tuberculous children described in THE LANCET of May 30th, 1903, p. 1551. The Waldschule is situated in a pine forest and comprises a variety of buildings. There are pavilions for the kitchen and other domestic purposes, a large hall where the children remain in bad weather, departments for bathing and gymnastics, a playground, and last, but not least, a school pavilion. The staff consists of a nurse who sees that the children have proper food and exercises supervision, a principal and four teachers, and a visiting medical man. Only two and a half hours are allowed for daily lessons apart from the instruction in natural science, gymnastics, and singing which is given in the open air. The rest of the day is spent by the children in the playground and in the forest under the care of the teachers. 120 feeble and anæmic, but not distinctly sick, children have been selected out of the Charlottenburg municipal schools for the Waldschule by the school medical officers. The teachers and the children arrive early in the morning, are supplied with food by the school, and return home in the evening. This innovation in the school system is certainly a good one and deserves to be imitated in other places on a larger scale.

The late Professor Weigert.

Professor Carl Weigert, chief of the pathological institution of the Senkenberg Academy at Frankfort, and one of the leading pathologists of Germany, died in that city on August 4th. His first work had reference to the staining of animal tissues by aniline colours—a method devised by him which has now become one of the most important processes in microscopical and bacteriological research. His researches on the neuroglia, on necrosis by coagulation, and on the proliferation of cells caused by external irritants are cardinal points in pathological anatomy. His investigations on the subject of tuberculosis, though carried on previously to Professor [illegible] means out of date. Professor [illegible] ünsterberg (Silesia) and studie [illegible] of Breslau, Berlin, and Vienna. On the completion of his medical curriculum he became an assistant to Professor Waldeyer at the Breslau Pathological Institution and at the Breslau Medical Clinic. When Professor Cohnheim, the celebrated pathologist and Professor Waldeyer's successor at Breslau, was called to Leipsic to become ordinary professor of pathology at that University, he only accepted this appointment on condition that Dr. Weigert should at the same time be appointed as his assistant. In 1879 Dr. Weigert was promoted to be extraordinary professor at Leipsic. In 1887 after the early death of Professor Cohnheim he was not appointed as his successor by the Saxon Government, although the Leipsic medical faculty was unanimously in his favour, and he therefore left Leipsic for Frankfort where he passed the remainder of his life as chief of the Senkenberg Pathological Institution.

August 23rd.

Medical News.

[illegible] eral inter-
[illegible] tudents held
[illegible]:—

Ella Mabel Barker, London (Royal Free Hospital) School of Medicine for Women; Charles Anthony Basker, Guy's Hospital; [illegible]

[illegible] Stephen Fenwick, Charing Cross Hospital; Janet Marcia Fisher, London (Royal Free Hospital) School of Medicine for Women; †[Alexander Fleming, St. Mary's Hospital; Sidney Frank Fouracre, Charing Cross Hospital; Ernest William Giesen, Guy's Hospital; Sidney Wilfred Grimwade, St. Thomas's Hospital; Edith Mary Guest, London (Royal Free Hospital) School of Medicine for Women; John Hadwen, St. Bartholomew's Hospital; Eric Henry Rhys Harries, London Hospital, Henry John Henderson, Guy's Hospital; Tom Shadick Higgins, University College; John Ernest Hodson, Guy's Hospital; Hendrik Houwink, University College; Douglas Walter Hume, St. Bartholomew's Hospital; Mary Sophia Jevons and Elizabeth Herdman Lepper, London (Royal Free Hospital) School of [illegible] L. [illegible] nd [illegible] di- [illegible] s Hospital; [illegible] t. Thomas's [illegible] gar Lionel [illegible] annett, St. [illegible], Catherine [illegible] ayne, London (Royal Free Hospital) School of Medicine for Women; August Frederick Perl, [illegible] Scott Pinchin, St. Thom [illegible] versity College, Mona D [illegible] *School of Medicine; Rich* [illegible] Eliza [illegible] Medicine [illegible] ebbing, [illegible] s Hos- [illegible] Charles [illegible] Henry Purton, St. Bartholomew's Hospital; Winifred Emmeline Watts, London (Royal Free Hospital) School of Medicine for Women; [illegible]

[illegible] Mary's Hospital; Newton [illegible] tal; Vera Foley, London [illegible] ine for Women; Norman [illegible] aude Howard S. Frankau, [illegible] rness, University College; Eric Leigh Fyffe, St. Thomas's Hospital; [illegible] n Gardner, [illegible] mas's Hos- [illegible]

[illegible] s Hospital; [illegible] Alexander [illegible] ey Kettle, [illegible] fred John [illegible] b, Guy's [illegible] rt Cubitt [illegible] l; Claude [illegible] l; Oswald [illegible] dward H. [illegible] sole, St. [illegible] Hospital; [illegible] Geoffrey [illegible] Orchard, [illegible]; Walter [illegible] ng Parry, St. Mary's [illegible] Royal Free Hospital) [illegible] Parsons Smith, St. [illegible] Francis E. Prideaux, [illegible]; Frederick Whitly [illegible] abbinowitz, London [illegible] 's Hospital; Roger [illegible] Hospital; Rowland [illegible] Thomas's Hospital; [illegible] School of Medicine [illegible] s Hospital; Charles [illegible] tal; Harold Willis [illegible] geant, [illegible] pital; [illegible] acey, [illegible] men; [illegible] Uni- [illegible] pital; [illegible] ary's [illegible] College; Stanley [illegible] Hospital; Geoffrey [illegible] Wilfred Vining, St. Mary's Hospital; Dora Muriel Watney and Lilian Enid Watney, London (Royal Free Hospital) School of Medicine for Women; Charles Henry Shorney Webb, Middlesex Hospital; Henry Owen West, King's College; Herbert George Willis, St. Mary's Hospital.

William Wallace Wood, London Hospital; Edward Musgrave Woodman, St. Bartholomew's Hospital; and Harold Addison Woodruff, Birkbeck College.

At the intermediate examination in medicine for external students held in July the following candidates were successful:—

Laurence Ball, University of Birmingham;
University of Leeds; Ernest Frederick Fi
Sheffield; Robert Applegarth Hendry, U
James Ernest Middlemiss, University of Leeds; Edward Selby Phipson, University of Birmingham; Harry Richardson Rawlings, University of Leeds; Arthur Toulmin, Victoria University; Arthur Henry Turner, University of Leeds; and Joseph W. James Willcox, University College, Bristol.

Special Examination in Organic Chemistry only.—Kathleen Baylis, University College, Cardiff; Maud Bennett, London (Royal Free Hospital) School of Medicine for Women; Alfred Bernstein, Victoria University; Edward Wrigley Braithwaite, University of Leeds; John Webster Bride, Victoria University; Bertie Isaac Cohen, St. George's Hospital; Stanley William R. Colyer, Charing Cross Hospital; Charles Harley Crombie, private study; Elkin Percy Cumberbatch, University of Oxford; Arthur Davies, Westminster Hospital; Trevor Berwyn Davies, University College, Cardiff; Canut Deuntzer, Middlesex Hospital; Donald Frederick Dobson, University of Leeds; Josiah Rowland B. Dobson, University College, Cardiff; Maurice Rowland Dobson, University of Leeds; Evan Parry Evans, University College, Cardiff; Frederick Pearson Fisher, University of Birmingham; Arthur Fothergill, University of Leeds; George Blenkhorn Harland, Guy's Hospital and University of Durham; Clement H. Heppenstall, University of Leeds; Howell Tylford Howells, University College, Cardiff; Robert Henry Hatten Jolly, Charing Cross Hospital; Arthur Rocyn Jones and Evan J. Goronwy Jones, University College, Cardiff; Hugh Braund Kent, Northern and South-Western Polytechnics; John Lewis, University College, Cardiff; William Ernest Lord, University of Leeds; Theodore Henry Mason, St. Bartholomew's Hospital; Constance A. Mortlock-Brown, London (Royal Free Hospital) School of Medicine for Women; Vincent Moxey, King's College and University College, Bristol; Edward H. Allon Pask, University College, Sheffield; Alfred Alex. Webster Petrie, University of Edinburgh and Edinburgh Medical School; William Joseph Petty, Dan Arthur Powell, and Laura Gertrude Powell, University College, Cardiff; Percy John Probyn, Charing Cross Hospital; Albert Edward Quine, Victoria University; David Ranken, University of Durham; Alfred Richardson, University of Leeds; Arthur M. Marsh Roberts, University of Liverpool; Kenneth Robinson, Victoria University; Harry Dudley Rollinson, University of Birmingham; Arthur Denys Rope, Middlesex Hospital; Norman Guy H. Salmon, Charing Cross Hospital; Alice E. Sanderson, B.Sc., London (Royal Free Hospital) School of Medicine for Women; Frank Sholl Scott, and Latimer James Short, University College, Bristol; George F. Rawdon Smith, University of Liverpool; Horace Elliot Rose
Stephens, Victoria University; Gra
minster Hospital; John Thompson,
Tilly, Cuthbert
College Alwyn
Victori Arthu
Birmingham; and Henry Whitehead, Victoria University.

This list, published for the convenience of candidates, is issued subject to its approval by the Senate.

SOCIETY OF APOTHECARIES OF LONDON.—At the examinations held in August the following candidates passed in the subjects indicated:—

Surgery.—R. H. Cooper (Section II.), Charing Cross Hospital; A. W. S. De Vine (Sections I. and II.), Birmingham; E. F. W. Hoare (Sections I. and II.), Liverpool; A. C. Story (Sections I. and II.), St. Mary's Hospital; and R. H. Terry (Section I.), Guy's Hospital.

Medicine.—G. B. Messenger (Section I.), Westminster Hospital; C. S. Scott (Section II.), St. Bartholomew's Hospital; I. C. Thorburn (Sections I. and II.), Liverpool; A. B. S. Todd (Section II.), Leeds; and S. H. R. Welch (Sections I. and II.), Charing Cross Hospital.

Forensic Medicine.—C. W. S. Boggs, Leeds; E. F. W. Hoare, Liverpool; J. E. Jones, Bristol; I. C. Thorburn, Liverpool; and H. M. Waller, St. Bartholomew's Hospital.

Midwifery.—W. G. H. Cable, London Hospital; and W. R. Elliott, Cambridge and St. Thomas's Hospital.

The diploma of the Society was granted to the following candidates entitling them to practise medicine, surgery, and midwifery: R. H. Cooper, A. C. Story, A. B. S. Todd, and S. H. R. Welch.

UNIVERSITY OF OXFORD.—The following degrees in medicine were conferred during the summer term:—

Doctors of hrist Church; Edgar W.
Willett, ers, Brasenose College;
Gustav J Arthur E. Boycott and
John D.
Bachelors Billinghurst, St. John's
College; A. F. Hertz, Magdalen
College; College; J. H. Thomas,
Trinity College; R. D. MacGregor, Exeter College; and P. A. Mansfield, Keble College.

Degree days are announced as follows for the coming term: Thursday, Oct. 20th; Thursday, Nov. 10th; and Saturday, Dec. 17th. Examinations for scholarships offered in natural science will be held on Dec. 6th at Balliol College, Christ Church, and Trinity College; on Dec. 13th at Lincoln and Magdalen Colleges; on Jan. 17th, 1905, at Jesus College; and on March 14th, 1905, at Keble College.

BIDEFORD DISPENSARY AND INFIRMARY.—The annual house-to-house collection of 1904 for the Bideford Dispensary has just been made, with the result that over £100 has been added to the funds of the institution.

ROENTGEN RAYS FOR MOSCOW.—The Moscow town council has ordered a Roentgen-ray cabinet at a cost of £150, inclusive of dynamo, for the use of the hospital sent by the town to the Far East. This apparatus will be under the control of the manager of the hospital, and if it proves to be satisfactory more will be ordered both for the hospitals in the town and the one in the Far East.

THE STILLBORN OF WARSAW.—In the suburbs of Warsaw, says the *Novoe Vremya*, the percentage to the births of stillborn children is 15. This excessive infant mortality is mostly due to the want of accoucheurs whose place has to be filled with self-styled nurses. In the suburb of Volya alone the number of stillborn children in ten years has been over 500.

THE LATE DR. JOHN SUTHERLAND.—Dr. John Sutherland of Netherfield, Nottingham, died on July 24th, in his forty-fifth year, after a very short illness. He was a native of Airth, a village in Stirlingshire, and his medical education was obtained at Edinburgh University where he graduated as M.B. in 1891. About 11 years ago he went to Netherfield, practised in partnership with Mr. J. T. Knight of Carlton-Gedling, and soon had many patients. Dr. Sutherland was a man of a good presence, rather over the average stature, and prepossessing in his manner; he was everywhere very popular and by his patients he was deservedly esteemed. The funeral, which took place at Carlton cemetery on July 26th, was very largely attended.

A HOSPITAL CURIOSITY.—On April 28th, 1903, a house-breaking firm made a unique discovery under the foundation stone of the old Royal Waterloo Hospital for Children, which they were razing to the ground. The foreman on removing a large piece of Portland stone, on which there was no inscription, discovered a glass tablet with the names of the founders, dates, and other details. There were also a small copper coin and a copy of the annual report of the hospital for the year 1822, contained in a bottle, and all in an excellent state of preservation. Among the patrons and vice-patrons were the following interesting names: The Duchesses of Kent, Northumberland, and Princess Augusta; the Dukes of York, Sussex, Grafton, Rutland, Beaufort, and others; Sir Robert Peel, Sir Humphry Davy, and other well-known people.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.—The following gentlemen have been elected as officers and members of council for 1904–05:—President: Mr. C. M. Tuke. Vice-Presidents: Mr. C. R. B. Keetley, Mr. W. P. Barrett, Dr. G. H. D. Robinson, Mr. J. R. Lunn, Dr. E. Furniss Potter, Mr. E. Bromet, Dr. G. P. Shuter, and Mr. H. Webb. Council: Mr. R. Pollock, Dr. A. M. Ross Sinclair, Mr. G. A. Garry Simpson, Mr. H. Percy Dunn, Mr. W. McAdam Eccles, Dr. E. P. Paton, Dr. E. A. Saunders, Dr. A. J. Rice Oxley, Dr. J. A. Mansell Moullin, Dr. A. Morison, Dr. A. E. Russell, and Dr. C. Buttar. Treasurer: Mr. T. Gunton Alderton. Secretaries: Dr. Andrew Elliot and Dr. W. H. Walter. Librarian: Mr. H. W. Chambers. Editor of Journal: Dr. Leonard C. T. Dobson. Editorial secretary: Mr. J. G. Pardoe.

ERRATUM.—In the list of the examination results of the University of Liverpool in THE LANCET of August 13th the name "D. T. Parry" given as having obtained the Diploma in Public Health should read *D. T. Barry*.

BOOKS, ETC., RECEIVED.

BAILLIÈRE, TINDALL, AND COX, London.
Railway and other Accidents with Relation to Injury and Disease of the Nervous System. A Book for Court Use. By Allan McLane Hamilton, M.D., F.R.S.E., late Clinical Professor of Mental Disease in Cornell Medical College. Price not stated.

CHURCHILL, J. AND A., 7, Great Marlborough-street, W.
Beri-Beri: its Symptoms and Symptomatic Treatment. An Essay printed by the Board of Trinity College, Dublin, for the Author. By Percy Netterville Gerrard, B.A., B.Ch., B.A.O., M.D. Dublin University. Price 2s. 6d. net.

Beri-Beri: its Symptoms and Symptomatic Treatment. Being Extracts from "An Essay on Beri-Beri," printed by the Board of Trinity College, Dublin, for the Author. By Percy Netterville Gerrard, B.A., B.Ch., B.A.O., M.D. Dublin University. Price

D. Strength and Power of

y Alexander Haig, M.A.,

Metropolitan Hospital

Women. Fifth edition.

Price 2s. net.

FISCHER, GUSTAV, Jena.

Ueber die körperlichen Aeusserungen psychischer Zustände. Weitere experimentelle Beiträge zur Lehre von der Blutzirkulation in der Schädelhöhle des Menschen. Von Dr. Hans Berger, Privatdozent der Psychiatrie an der Universität Jena. Preis für Text und Atlas, M.20.

Klinisches Jahrbuch. Herausgegeben von Prof. Dr. F. v. Eiselsberg, Prof. Dr. Flugge, Prof. Dr. F. v. Mering und Prof. Dr. Werth. Zwölfter Band. Viertes Heft, preis M.4 50. *Funftes Heft,* preis M.2.50.

LOCKWOOD, CROSBY, AND SON, 7, Stationers' Hall-court, Ludgate-hill, E.C.

Tl

MACMILLAN AND CO., Limited, London.

The Story of an East London Hospital. Price 2s. 6d. net.

MURRAY, JOHN, 50A, Albemarle-street, W.

A Primer of Physiology. By E. H. Starling, F.R.S. Price 1s.

The Recent Development of Physical Science. By William Cecil Dampier Whetham, M.A., F.R.S., Fellow of Trinity College, Cambridge. Price 7s. 6d. net.

OFFICE OF THE SUPERINTENDENT OF GOVERNMENT PRINTING, Calcutta.

Scientific Memoirs by Officers of the Medical and Sanitary Departments of the Government of India. Specificity of Anti-venomous Sera. (Second communication.) By Captain Geo. Lamb, M.D. *Glasg., Indian Medical Service. New Series. No. 10.* Price As. 8 or 9d.

RABBINOWICZ, E. W., 48, Commercial street, Aldgate, E.

Tl Jacob Snowman, M.D.,

cer of the Initiation

s of the Medical Board

VOGEL, F. C. W., Leipzig.

Nach

Dr. J.

nleiden.

Eine Studie aus dem Jahr 1903. Von Dr. Franz Fink, Primarius des Allgemeinen Krankenhauses in Karlsbad. Price M.3.

WALKER, JOHN, AND CO., Limited, Farringdon House, Warwick lane, E.C.

Great Britain's Colonial and Indian Possessions. A Handy Reference Guide to the British Empire. Price 1s.

Appointments.

Successful

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invited

Editor.

week,

itutions,

mn, are

he Sub-

of each

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

Salary £00 per

Health. Retaining

Resident. Salary

renewable. Salary at rate of £75 per annum, with board, washing, and apartments.

CARDIFF UNION WORKHOUSE.—Assistant Medical Officer, unmarried. Salary £130 per annum, with rations, apartments, attendance, and washing.

CARLISLE, CUMBERLAND INFIRMARY.—Resident Medical Officer as *House Physician and House Surgeon, for six months each.* Salary at rate of £80 and £100 per annum respectively, with board, lodging, and washing.

CARLISLE NON-PROVIDENT DISPENSARY.—Resident Medical Officer. Salary £150 per annum, with apartments (not board).

CHELTENHAM GENERAL HOSPITAL.—Assistant House Surgeon, unmarried. Salary £92 per annum, with board, lodging, and washing.

DOWNPATRICK, DOWN DISTRICT LUNATIC ASYLUM,—Junior Assistant Medical Officer, unmarried. Salary £100 per annum, with apart-

WOMEN,

m £25,

Salary

annum,

with board, lodging, and washing.

HAMPSTEAD GENERAL HOSPITAL.—Resident Medical Officer for six months. Salary at rate of £120 per annum, with rooms, coals, and gas.

LIMPLEY STOKE, NEAR BATH, OPEN-AIR SANATORIUM FOR CONSUMPTIVES.—Resident Medical Officer. Salary £200 per annum, rising to £300.

House Surgeon for

geon. Salary £70

SALFORD ROYA months.

Salary £70

ST. PETER'S Covent-garden, W. Salary at rate of £50 a

STOCKPORT INFIRMARY.—Junior Assistant House Surgeon for six months. Salary £40 per annum, with board, washing, and

IRMARY AND EYE HOS-

geon for six months,

artments, and washing.

cer. Salary £100 per

sident Junior House

ard, lodgings, washing,

W.—One House Physi-

months. Board, lodging,

the Island of Pemba.

Salary £360 per annum

Births, Marriages, and Deaths.

BIRTHS.

W., the wife of

n lane, Coulsdon,

M.R.C.S. Eng.,

den Green, N.W.,

MARRIAGES.

CLA MALLETT.—On August 16th, at Emmanuel Church, West

B.A., John Cecil Clayton,

C. Clayton, late 34th

ughter of the late Alfred

HA at Grove-park Church,

second son of James L.

r Cameron, of Balchaney,

Pitlochry

DEATH.

M'EWAN.—On August 21st, at Bedford, Dugald M'Ewan, Inspector-General, M.D., R.N., Honorary Physician to the King.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

SLUM DWELLINGS AND SANITATION.

As a rule the slum-property owner who leaves his premises in an insanitary condition deserves no mercy, but we have always been willing to allow that in some instances his desire to do right is annulled by the conduct of his tenants. For instance, if water-closets are put in they are made filthy by the habits of the tenants. They are used as sinks and as receptacles for all sorts of waste and consequently get blocked. Dr. John Robertson, the medical officer of health of the city of Birmingham, in his report for the second quarter of the current year, has an interesting little note upon this question as it arises in Birmingham. The following are the arrangements that were made and we congratulate Dr. Robertson and his staff upon the work which they have done and the good results which they have obtained. The report says:—

> "One alteration made during the quarter consisted in detailing two of the court cleansers to go round and inspect the water-closets in the poorer districts with a view to getting the tenants to keep them clean, free from blockage, and with the doors locked. Distinctly good results have already been obtained from this frequent inspection, and it is hoped that in this way it will be possible to educate the lower classes to do their part in looking after the closets which have been provided for them at a considerable expense by the owners of the property.
>
> The following figures give some idea of the work done by these two men during the quarter.
>
> | | |
> |---|---|
> | Number of water-closets visited ... ... | 27,545 |
> | " found with doors unlocked ... ... | 13,890 |
> | " found with dirty floors ... ... | 1370 |
> | " found with dirty seats ... ... | 1129 |
> | " found with dirty basins ... ... | 5857 |
> | " found defective ... ... | 413 |
> | " found choked ... ... | 1082 |
>
> In each case where the closet was found to be dirty the persons using it were asked to put it in order, and in most cases this was sufficient. Where, however, the closets were frequently found in a filthy condition notices have been served, and legal proceedings will be taken if necessary."

CLOTHES AND PHYSICAL DEGENERATION.

A CORRESPONDENT signing himself "S. H. C." has written to the *Daily Chronicle* on August 17th concerning the above subject. He states that whilst the masculine physique is deteriorating the female figure is growing taller and better developed. In his opinion there is a certain well-defined reason for this difference which is receiving little if any attention. During the last 25 years he has observed some 7000 children in our elementary schools, and this observation has led him to the conviction that the matter of clothing needs special investigation. Girls, he says, are clothed in loose garments which are frequently washed. Boys, on the contrary, are dressed in tight-fitting cloth or serge garments, and these in most cases are never cleaned from the time when first made until the day when they literally drop off. He considers that if it were made compulsory that boys should be dressed in loose, clean clothes we should probably hear less about the degeneration of the race. We think that "S. H. C." has put forward a theory which is to some extent plausible. The accepted reason why the women of the last 20 years or so have grown taller than their mothers is that they lead different lives, but neither the fact nor its explanation is free from doubt. With regard, however, to the clothing of school-boys there can be no doubt that the school-boy of the lower and even of the lower middle classes wears clothes which certainly in many cases are anything but clean. Anyone who has had anything to do with boys' schools knows the peculiar smell of unwashed cloth clothes. It is probable, too, that in the case of the humbler classes of society the cloth of which their clothing is made is, to begin with, manufactured from shoddy, a material of which the components have seen their best days long before they start on their new career as cheap cloth. All this is true, and such clothing compares from a sanitary point of view badly with the often washed prints worn by girls; but we doubt if "S. H. C." has really furnished a cause of stunted growth.

ACCOMMODATION FOR RUSSIAN INSANE.

THE *Novoe Vremya* observes that the protection of the insane in St. Petersburg is of a deplorable character. All special asylums are full up, whilst it cannot be hoped that the request of the council to have district asylums built at Government expense will be settled soon, though application has been made in that sense. But the city infirmary committee have intrusted the chief medical men of the city infirmaries to work out the question of the improvement of the accommodation for the insane in the capital, as well as the installation of special infirmaries for dipsomaniacs. The urgency of this question is substantiated by an article that appeared in the *Novosti* some time ago headed "People in Chains," in which the writer stated, inter alia, that there were about 1500 insane in the Province of St. Petersburg and that for want of public arrangements for their care they are at the charges of their friends who care for them in numerous cases under most cruel conditions, some 400 being kept in chains by their relatives in huts, and some of them, the very violent, have to be caged off. He states that the chained condition of many has lasted from 10 to 15 years. Numbers have lost the power of speech and can simply howl and grind their teeth, while they lie on the ground like wild animals. The writer opens his article with the observation that "It is strange, but true, that in the large and wealthy government of St. Petersburg there is not even one infirmary for the diseased in mind."

WANTED—A HOME.

To the Editors of THE LANCET.

SIRS,—Will any of your readers kindly recommend me a home or institution where a patient of mine (a boy, aged 14 years) can be placed? He is feeble-minded but can read and write and is capable of being trained; is obedient but requires discipline. Roman Catholic home, London or south coast, preferred. Terms must be moderate.

I am, Sirs, yours faithfully,
E. T. CROUCH, M.R.C.S. Eng., &c.

Stoke House, Gosport, Hants, August 21st, 1904.

THE APPEAL ON BEHALF OF MISS E. B. PELLATT, L.S.A.

THE treasurer, Surgeon-Colonel F. H. Welch, 8, Brandram-road, Lee, Blackheath, S.E., begs to acknowledge the receipt of the following sums, additional to those already reported:—

	£	s.	d.		£	s.	d.
Miss M. E. Ekin	0	5	0	Miss F. F. Kelaart... ...	0	10	0
Mrs. R. Wilmot	0	10	0	Miss W. M. Dod	1	1	0
E. A. A.	1	1	0	Misses Slee	0	15	0
M. A.	1	1	0	A Thankoffering	1	0	0
Miss M. E. Lake	1	0	0	Rose E. Hope	2	2	0
Miss F. E. Cassan... ...	5	0	0	A Well Wisher	0	10	0
Methodist Doctor	2	2	0	Miss Martin	2	2	0
Mr. C. E. Phipps	1	1	0	Dr. J. J. Nason	1	1	0
Miss Jacomb	0	10	0	E. M. J.	0	6	6
Miss G. Beattie	0	10	0	Mr. R. Braithwaite ...	1	1	6
Miss E. Garland	0	10	0	Miss M. Goodal	1	5	0
Provost Ball	1	1	0	E. Wood	0	2	6
Miss H. Iremonger ...	2	2	0	G. L.	0	10	0
Miss A. C. Jervoise ...	3	3	0	Miss L. Newton	1	0	0
Miss Cope...	0	5	0	Rev. H. R. Manders ...	1	0	0
Miss M. Moriaty	1	0	0	Miss M. Gill	1	0	0
Dr. J. M. Macdonald ...	10	0	0	Dr. P. Jakins	1	1	0
M. S.	0	10	0	Dr. C. R. Fleury	1	1	0
Mrs. Creaghe-Haward...	1	0	0	Dr. and Mrs. Coleman	1	1	0
Mrs. H. L. Lancaster ...	2	2	0	Mr. F. B. Palmer	5	5	0
Dr. O. Codrington... ...	5	5	0	Mr. E. S. Frost	0	10	6
Sidesman, St. Barnabas.	0	5	0	Rev. G. Greenwood ...	5	5	0
L. T. T.	0	3	6	The Blind Child of a Country Parson ...	0	5	0
M. E. D.	5	0	0				
Miss Lillington	1	0	0				

SCHOOLS FOR FEEBLE-MINDED CHILDREN.

To the Editors of THE LANCET.

SIRS,—I shall be much obliged if any of your readers will give me the address of a good school to which to send a feeble-minded girl, nine years of age. The parents are able to pay a fair fee—say up to £80 a year—and would prefer a school within easy reach from Llandudno.

I am, Sirs, yours faithfully,
EDWARD GOODDY.

Glenthorne, Trinity-square, Llandudno, August 19th, 1904.

MORE ALLEGED ABORTIONISTS.

AT Marylebone police-court on August 27th Sarah Elizabeth Allen, of Dornfeld-street, West Hampstead, was charged on remand with performing an illegal operation upon a young woman, and Ellen Stoneman, of Chesterton-road, North Kensington, was charged with aiding and abetting her in committing the offence. Mr. Plowden committed the prisoners for trial.

◆

In suspense.—No medical man is "obliged by law" to attend any case to which he may be summoned unless the patient is under his care in his capacity as medical officer to a hospital, workhouse infirmary, or other institution, or unless he be a naval or military medical officer on duty, or a police surgeon, or other paid medical officer. His obligation then arises out of his undertaking to perform the duties of a post which he has accepted and in which such duties are naturally involved. The obligation of a medical man in ordinary practice to attend his patients arises out of a contract to do so which may be express or implied and for the breach of which he is liable, as they are liable to pay him for his attendance. Whether his putting off his attendance to suit his convenience would be a breach of his duty must obviously depend upon circumstances. The General Medical Council may remove from the Register the name of a medical practitioner whom it may adjudge to have been guilty of infamous conduct in any professional respect. The question whether his conduct has been such is a matter of fact which the Council decides according to the evidence in the particular case before it.

H. A.—The answer to our correspondent's question depends entirely on the terms of the contract between the parties and his best course is to consult his legal advisers. As there are proceedings pending he could, if he has a right to them, probably take some steps in the existing action for the purpose of obtaining either delivery over of the books or their inspection.

METEOROLOGICAL READINGS

(Taken daily at 8.30 a m by Steward's Instruments)

THE LANCET Office Aug 25th 1904

Date.	Barometer reduced to Sea Level and 32° F	Direction of Wind	Rain fall	Solar Radiation in Vacuo	Maximum Temp Shade	Min Temp	Wet Bulb	Dry Bulb.	Remarks at 8 30 A M
Aug 19	29 92	W		110	67	53	54	60	Cloudy
" 20	30 05	N E		106	67	53	53	56	Cloudy
" 21	30 01	N		94	66	52	56	58	Cloudy
" 22	29 79	S	0 13	95	65	56	57	59	Overcast
" 23	29 99	N E	0 35	105	65	54	55	59	Cloudy
" 24	30 05	N	0 01	108	63	50	51	55	Fine
" 25	30 16	N		96	64	49	51	54	Cloudy

Medical Diary for the ensuing Week.

OPERATIONS

MONDAY (29th) — P M) St
Thomas's (3 30 2.30 P M)
Middlesex (1 3 (2 P M)
Samaritan (G ol o-square
(2 P M) Roya (4 P M)
Gt Northern C) London
Throat (9 30 A M) Royal Free (2 P M) Guy's (1 30 P M)

(2 P M) Central London Throat and Ear (2 P M)

iversity College
Charing Cross
King's College
Mary's (2 P M)
M) Samaritan
) Gt Northern
tan (2 30 P M)
Golden square

THU

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An Address

UPON

THE SURGICAL TREATMENT OF ACUTE INTESTINAL OBSTRUCTION.

By ARTHUR E. BARKER, F.R.C.S. Eng.,
SURGEON TO UNIVERSITY COLLEGE HOSPITAL.

IN considering this subject it will be well in the interests of brevity to define at once as comprehensively as possible the factors in obstruction which we have to treat surgically. These may be conveniently arranged under three heads. Some are purely (1) mechanical or anatomical factors; some are (2) physical factors; and some, again, are (3) vital factors. It would be impossible in the short time allotted to us to deal with all these in all their bearings and only the most important of each can be noticed.

1. *Under the head of "anatomical factors" will come the* consideration of the part of the intestinal tract which is the seat of the stoppage. This has an important bearing upon the treatment in so far as it claims the greatest promptitude of action and the most delicate handling of the parts involved. It is well known that the higher up the obstruction the earlier and the more acute, speaking generally, are the symptoms. On the other hand, the lower down the stoppage the greater the amount of retained matter and the more septic is it, while marked symptoms set in as a rule later. It is also almost certain that operations involving structures high up in the abdomen make a heavier demand upon the patient's powers than those done on parts low down. The character of the obstruction may best be placed perhaps under the heading "mechanical," whether it be a band, a volvulus or an intussusception, or an inclusion of bowel in one or other of the several pouches of the peritoneum. All these variations in the form of mechanical cause of obstruction have an important bearing on the treatment and must be constantly borne in mind, though we cannot dwell upon them here. It is enough to say that they are relatively the least important of all the factors. They have to be removed and this is a matter of mechanics and comparatively easy.

2. Of far more importance are the factors which may be grouped under the head of "physical changes" in the bowel. These include the anæmia at the point actually constringed, the venous engorgement of the parts distal to the constriction which is common, the consequent œdema, thrombosis, and frequently sphacelus or ulceration of that portion which are inevitable if there is delay in the treatment.

3. But under the heading "vital changes" come the most important factors of all in stoppage of the bowels. It may be a simple matter to find out and to divide a band, to untwist a volvulus, or to unravel an intussusception or other mechanical obstruction and thus to relieve the venous engorgement and its attendant physical evils. But in many, if not in most, of the cases of obstruction as they reach the surgeon the trouble does not end here. We have still to contend against both local and general "vital changes" in the body and these, I venture to think, are nowadays our greatest difficulty, since the dangers of mere opening the peritoneum have receded into the background. Above an obstruction, say low down, we have much retained fæces. In these we have swarms of bacteria existing under the most favourable conditions for multiplication. The retained matters are being constantly driven against the blocked spot by peristalsis and as a consequence the bowel becomes more and more congested and hypersecretion takes place. The micro-organisms fabricate in time large quantities of toxins for which there is no escape. Consequently, they are absorbed into the system by the usual channels, producing profound general depression of vitality with fever and often lung and kidney complications, and besides this soaking the congested bowel wall for a long stretch above the constriction, further devitalising it, causing paresis or paralysis of its muscular tissue, and preparing the way for that migration of bacteria through the bowel wall into the peritoneum which we now know takes place even without any breach of continuity if the vitality of the bowel has [illegible] As a consequence we have in [illegible] infection of the peritoneum even [illegible] Moreover, after an obstruction has been relieved such peritonitis may start from an unopened bowel soddened with toxins and loaded with putrid material which in its paralysed condition it is unable to get rid of by propulsion.

All these factors are met with in varying degrees in almost every case of intestinal obstruction with which surgeons come in contact from that caused by a band to that due to a volvulus. And if the surgeon is to treat the case rationally they must all be borne in mind and be met by special measures in each case. It will only be possible here to sketch in the merest outline the surgical methods to be employed in dealing with such conditions on the reasoning already given in brief.

Obviously in cases where an early diagnosis has been made and few or none of the *physical* or *vital* changes alluded to are present our only care is to restore as soon as possible the anatomical integrity of the intestinal tube. We have nothing to fear from the physical or vital changes in the gut, peritoneum, or system generally. This is quite clear from our experiences with recently strangulated herniæ. We divide the constriction, replace the bowel, and expect and obtain, as a rule, rapid recovery. The same is the case where a band is divided *early* in a case of *internal* strangulation or where an intussusception is unravelled or a volvulus untwisted. It is purely and only a question of mechanical relief. Clearly, then, it is unnecessary to labour the claim for an early diagnosis and prompt surgical action. More depends upon these than upon any particular method or details, how[illegible] delay both in diagnosis and [illegible] too frequently takes place in cases of intestinal obstruction and when at last an operation is undertaken we are face to face with physical and vital conditions, local and general, which continue to be dangerous or even disastrous after the mechanical obstruction has been relieved. What can be expected of surgical interference where a bowel for a long distance above the obstructed point is in a state of paresis or complete paralysis and is loaded with pints of putrid, fermenting fluid and the walls of which *have almost or entirely lost their vitality? Such a bowel after* release of the obstruction may subsequently necrose and perforate, or, even without any breach of continuity, its loss of vitality may permit the passage through it of virulent organisms present in millions which do not pass through healthy walls. How little can surgery do when as a consequence of these changes the system is saturated with toxins depressing the functions of every organ and tissue in the body and probably already initiating well-known pulmonary and renal diseases. Surgical interference involving a long operation undertaken under these conditions is *necessarily* and *inevitably* imperfect in the highest degree and, as we know, is often futile. As if to emphasise this point, while writing the foregoing sentence a few evenings ago I was telephoned for to see a case of intestinal obstruction at hospital which had just arrived. I put down my pen and went at once, but only to see the patient expire just as I reached the bedside after getting rid of a large quantity of stercoraceous vomit. I have since heard that the post-mortem examination showed a band obstructing the ileum low down and that the latter for a long distance above was in a most unsound condition and could not have been left in the abdomen with any prospect of recovery.

But in turning now to the details of the operative treatment, let us suppose that a case though bad has not yet reached quite such a hopeless stage as that just mentioned and let us try to formulate rules of procedure. This can be modified according to the stage of obstruction at which the patient has arrived.

The first thing is to ascertain whether the stomach has been emptied. It may be stated by the friends that vomiting has just taken place, but this should not deter us from using the stomach-tube and we shall be surprised in many cases by the quantity of foul matter which can be removed even where vomiting has been free just before. To leave this [illegible] intestine itself, which, already paralysed, is after operation in the worst possible condition for propelling its contents downward. This washing out should be repeated over and over again before the patient is anæsthetised.

The mouth and throat should then be washed out with some antiseptic fluid, such as chlorate of potash or sanitas, and a warm drink of brandy-and-water should be given if the stomach is empty. If the patient is very feeble it is also sometimes of the greatest use to instil subcutaneously half a litre of a 5 per cent. solution of glucose or of normal saline. This has not only the effect of supplying the tissues with the water which has been lost by vomiting, and by the lungs, skin, and kidneys, but also gives the latter organs a better chance of eliminating toxins in diluted form and consequently with less damage to themselves. The glucose, too, is a food and in 5 per cent. solution is isotonic with the blood and easily borne by the tissues into which it is injected. If glucose and normal saline are used together the first should be 2½ per cent. and the salt 0·45 per cent., which I have found to be isotonic. Alone they are respectively 5 per cent. and 0·9 per cent. A rectal injection of warm normal saline solution and half an ounce of brandy is also desirable.

The further preparation for operation includes all the precautions of asepsis. The society has so recently had the advantage of hearing Mr. C. B. Lockwood upon this subject that nothing further need be said upon it now except that I should like to express the conviction, based upon an experience of asepsis pure and simple for many years, that the less *chemical germicides* are used once the skin has been cleansed the better for the result of the operation. They should never be used within the abdomen.

The patient should, of course, be kept as warm as possible by being wrapped in wool and surrounded with hot bottles, the room being heated to at least 70° F.

The choice of an anæsthetic is a matter for each surgeon to decide for himself. But for my own part I feel more and more every day that these operations should be done under local analgesia, wholly or in part. This feeling is not due to any special fear of ether or chloroform in ordinary cases. But in those under discussion, where the respiration is often embarrassed by a distended abdomen and where the vital powers are lowered by want of food, vomiting, and in many instances by advanced toxæmia, I have a very strong conviction that the chances of recovery are very much diminished by general anæsthesia. It is an easy thing now to render the skin, muscles, and neighbouring peritoneum absolutely insensitive to pain, and as the intestines themselves are insensitive they can be cut, stitched, and handled without any suffering. The root of the mesentery and its lateral reflection are the crux and if it is necessary a little chloroform can be given for the necessary intra-abdominal manipulation which may only last a few minutes. But it is a very different thing to give a general anæsthetic for, say, five minutes and to keep a patient even lightly under for from 50 to 100 minutes. In one case there are usually no depression and no after-sickness: in the other there are usually both. For children and for certain nervous young people local analgesia is unsuitable, but this class of patients, as a rule, bear chloroform well. It is for the mature, and particularly the aged, that I would plead for a more extended use of local analgesia. In its most recent development it is an enormous improvement on the form it took up to a year ago. But the details must be mastered by much practice in a variety of cases before it can be employed with confidence.

When the abdomen is opened it is a most valuable rule to search first of all for a loop of *empty* bowel in the right iliac fossa as a guide to the obstruction which in the majority of cases is low down. This is a far easier method of finding the point of stoppage than to search along the distended gut which is proverbially difficult to manipulate and to control.

The actual release of the obstructed bowel is a purely mechanical matter and will be carried out by different surgeons in various ways but it is certainly easier to work from the empty bowel towards the distended portion than *vice versâ*. If a band is found it is a simple thing to divide it. If an intussusception is present we only follow the path of wisdom if we adopt Mr. Jonathan Hutchinson's advice of long ago and always attack it from the distal end and avoid all pulling from the proximal. Only one other point I would venture to plead for in this connexion—namely, that all this should be done as far as possible within the abdomen. I am no friend of eventration and believe it to be in most cases not only hurtful but unnecessary. One is tempted, of course, to do it in cases of great distension. But even here it is better to draw forward a small portion of the most distended gut and to slit it open over a basin and to empty it than to expose large tracts externally. It must not be forgotten that the mere evacuation of gas and liquid fæces revives the patient and where great asthenia is present, of course, in some cases the operation should go no further until the abdomen is emptied, but such cases are in my experience few nowadays.

But short of these almost hopeless cases others give us *nearly* as much anxiety where several feet of bowel above the obstruction are distended, paralysed, sodden, and discoloured. From experience we know that this bowel is most probably ulcerated internally not only at and just above the constriction but often for a foot or two upwards. What are we to do in such a case? To return the bowel after simply relieving the obstruction is to allow pints of fermenting fæces either to remain stagnant or to escape into the empty, and as it were hungry, bowel below with all the risks of more abundant absorption of the poison than before. If this is not done one of two alternatives remains. Either we must temporarily drain the distended gut or boldly resect several feet of it with their contents and unite the upper and lower portions. Of the two I prefer the latter course. By this means we remove at one sweep all the septic bowel and its contents and with these the greatest dangers to the patient. These are the dangers of peritoneal infection with or without sloughing or perforation of the bowel and of toxæmia from absorption of its liberated contents as they pass into the intestine below. For the last five years I have generally acted on this principle with results far superior to any I was able to obtain previously. But I have so recently written upon this subject in detail with an analysis of all the cases which led to this rather bold conclusion that it is natural to hesitate to take up your time by going over the ground again.[1]

One point is perfectly clear from the experience of these recent cases—namely, that there is no more *shock* from removing several feet of bowel than there is from taking away a few inches. Again, we need to be reminded that the anastomosis of the remaining parts is equally easy or difficult independently of the length of the part resected.

Permit me to allude to two cases of acute intestinal obstruction in which this course was adopted with perfect success. The gut removed in each case is on the table. The first was that of a feeble old woman, aged 78 years, with an intermitting pulse when admitted. The cause of the obstruction was a band and the gut for quite two feet was black and almost gangrenous and was surrounded by more than a pint of dirty stinking fluid which gushed out when the abdomen was opened. Here I excised five and a half feet and joined end to end. There was *no* shock and recovery was perfect under one dressing. The patient returned to show herself quite well a year later and is, I believe, still well four years after operation. (N.B.—The bowel was extensively ulcerated above the obstruction.) The next case was that of a woman, aged 52 years, with a gangrenous femoral hernia. I had to go more than six feet above the obstruction to find fairly healthy bowel. Lateral anastomosis was done and six and a half feet of ileum were cut away between the point of junction and the obstruction. Here, too, there was no shock and the recovery was complete. But it is interesting to note that there was much very foul diarrhœa for some days. On the third day after operation the patient had three copious putrid stools, on the fourth day she had five, and on the fifth day six, and then there was no action of the bowels until the ninth day, but still a loose motion, though not so foul. Here the evacuations must have come from above the point of junction, for the bowels were well opened on the fourth day of strangulation after stercoraceous vomiting had set in. Neither of these cases could have recovered if it had been possible to replace the bowel loaded with putrid fæces. They would have died either from perforation or toxæmia, or from the exhaustion of diarrhœa in getting rid of the festering material stored up above. Let it be remembered that if the bowel be distended to only two inches in diameter every foot of it will contain more than one pint of putrid material.

On the question of shock from these operations I should like to be permitted to mention briefly one other case of recent occurrence. This was the case of a patient under the care of Dr. F. Roberts and was one of the worst cases of typhoid fever he or my other colleagues had ever seen The woman who was 33 years of age, was in the third week of the disease She had suffered from severe hæmorrhages, had had severe bronchitis and on the day of operation had a temperature of 105 6° F with rigors Symptoms of perforation having come on I was asked to operate Dr F J Poynton, who was kind enough to see the patient with me in the unavoidable absence of Dr Roberts, gave it as his opinion that she would die if a general anæsthetic was employed but that if an operation could be done under local anæsthesia without shock it ought to be done at once I opened the abdomen under β eucaine analgesia and found extensive gangrenous patches over a length of intestine and peritoneal effusion As all were covered with lymph and threatening to give way I resected the whole loop including 27 inches and joined end to end (specimen shown) Again according to the physicians in charge there was no shock and the next day the patient was decidedly better with improvement of pulse and temperature Fresh hæmorrhage set in later and she died as the result There was ulceration in the remaining gut and throughout the whole colon down to the rectum, and apparently several of these ulcers had furnished the fatal hæmorrhage The line of suture was perfect in every respect The pulse had improved until the bleeding set in I only mention these cases from among a number to illustrate the fact that there is not necessarily any shock from enterectomy

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[1] THE LANCET, May 30th (p. 1495) and June 6th (p. 1576), 1903.

The conclusions I should venture to draw from the foregoing reasoning are these 1 That too much stress has been hitherto laid upon the mere removal of the mechanical
ition of the putrid
is is only to repeat
, Mr Greig Smith
2 That the older method of emptying the bowel by establishing an artificial anus is unsatisfactory as the bowel is in a state of paresis or complete paralysis and only expels its contents very slowly and until it is cleaned out the cause of
the
Mr
the
• us this, and that this method of treatment is unsatisfactory any careful analysis of a long series of cases reveals as I have endeavoured to show in the paper just referred to 3 That the best course in many of these cases probably in all that are still within the reach of any operative procedure is to resect the tract of paralysed and distended bowel at once This would not of course apply to recent cases where the bowel is not seriously damaged by the retained fæces and is manifestly sound at and above the seat of obstruction But excluding these there remains unfortunately a large group of cases where we are face to face with a disastrous state of things which requires very bold action on our part

On the question of drainage of the abdomen or not in these cases each surgeon will act upon his own judgment in particular cases For my own part I am in most cases in favour of closing the abdomen at once unless there be general peritonitis having a great belief in the power of the peritoneum to take care of itself The reasons for this would lead us too far But I must admit that I have lost a case almost certainly from closing without drainage after resection of the diseased part

The after treatment of these cases is of extreme importance They should in all instances sit up in bed from the first as much as possible and only lie down, preferably on one side or the other for sleep so as to overcome the tendency to hypostatic pneumonia [3] They should begin at once to take a mixture of ten grains of carbonate of bismuth three times daily which with Kocher I believe to be the best intestinal antiseptic Albumin water with one drachm of brandy, should be given from the first by the mouth in small quantities and nutrient enemata and instillation under the skin of normal saline solution or 5 per cent solution of glucose is recommended as a routine Half a litre morning and evening may be given if necessary Hitherto perhaps we have been too sparing of food by the mouth In small quantities and light it may be given early at all events in cases where the diseased bowel has been resected

In many cases diarrhœa is a very troublesome complication It is the natural effort to discharge a quantity of putrid retained fæces and is often mixed with blood and mucus *It is not well to check it too much as this material* must be evacuated before the patient is safe Here the bismuth plays a useful part in cleansing the gut, and so arresting the diarrhœa

In some cases, especially intussusceptions the temperature rises to a high degree after liberation of the gut The explanation usually given of this is the passage into the circulation of blood which has been stagnant in the included bowel long enough to be saturated with toxins This is probably correct Cold sponging and warm drinks have proved the best treatment for this condition so far as I have seen in many cases If the fever is due to pulmonary emboli or pylephlebitis we can only sustain the general *strength by the use of the usual stimulants*

It must be obvious that in a subject such as this many other points might be discussed but time fails and only an outline can be given as a basis for debate

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[3] The cases from which I excised 5½ feet and 6½ feet sat up at once and the old woman, 78 years of age was in an armchair by the fifth or on the sixth day

SOME REMARKS ON PYOSALPINX BASED UPON NOTES OF 23 CASES

By E STANMORE BISHOP, F R C S Eng ,
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A collection of cases of one kind is always interesting to those engaged in similar work, and still more so if it covers a number of years and so reflects to some extent the evolution of the operator s views and of the measures employed Although the number of cases is not large, inasmuch as cases occurring in connexion with fibroid tumours and some other complications are not included, it will be seen that the list extends in date from 1894 to 1903 a period of ten years During the last decade a great amount of activity has been devoted to pelvic surgery and the changes have been many and radical Thus in 1894 abdominal drainage by Keith s glass tubes was the rule after any operation upon structures in the pelvis, especially if any formation of pus was present The powers of the peritoneum with regard to the disposal of effete material were but imperfectly known and still less trusted and the differing virulence of pus was not so clearly appreciated as it is now Since these two facts have received the due recognition of their force the old idea that drainage was in all cases imperatively necessary has ceased to be dominant and the dangers of the employment of drainage tubes themselves have been more clearly recognised In Case 8 there can be but little doubt that the tube contributed to the production of a fæcal fistula by its pressure upon the bowel The same thing was threatened in Case 5 Glass tubes required frequent movement or they became impacted by the entrance of omentum or other structures into their openings below the surface They were rotated and slightly lifted from time to time During such movements it was very easy for a small knuckle of intestine to slip beneath their lower extremity and to become nipped between this and the concavity of the sacrum behind Moreover, the opening into the peritoneal cavity intended as a means of exit for matters within was of necessity also a means of entrance for bacteria from without and pus which had become sterile might easily become a nidus for the development of new and virulent organisms which thus were freshly implanted The fact that the long retention of pus in a closed cavity, such as the Fallopian tube became resulted in the death of the germs which had originally produced it, and that what was left was nothing more than a collection of fattily degenerated cells was for a long time but imperfectly understood and appreciated When it was understood the apparent necessity for drainage of any undetected and unremoved particles of such a fluid disappeared Then Clark, Muscatello and others demonstrated the wonderful powers of absorption of the peritoneum which when unhampered by the presence of drainage tubes, quickly cleared away all dangerous material from its interior, and the necessity, if this were to be complete, of the re formation of a perfectly closed cavity, in order that the necessary intra peritoneal currents might once more come into play

The presence of this glass tube was harmful in two other ways The more important was the fact that a weak point was thereby produced in the abdominal wall, from which a post-operative ventral hernia was almost surely developed. The presence of a glass tube projecting from the abdominal wall also necessitated the maintenance of the patient in a definite position. Material which had to be removed was supposed to drain towards the lowest point, the bottom of Douglas's pouch, from whence it was drawn up by an exhausting syringe, and in order that this might be the case it was necessary to keep the patient in such a position that the bottom of Douglas's pouch should always be the lowest point. All abdominal surgeons know what a difficulty there is in restraining the restless tendencies of a patient during the first few days after an abdominal section. The necessity for perfect stillness in one position amounts in some patients to positive torture, to say nothing of the probability of the formation of bed-sores over the bony points thus subjected to prolonged pressure. If for this alone the abandonment of the glass tube was a great relief to both surgeon and patient. And when Clark proved that in many cases the post-mortem examination showed that the tube itself had rapidly become inclosed in a surrounding sheath of lymph shutting off all the rest of the peritoneal cavity, whilst collections of pus existed around it, within a few centimetres of its circumference, thus demonstrating its inutility for the very purpose for which it was used, its retention at once became impossible. Muscatello demonstrated that foreign material was removed from the peritoneal cavity, when that was intact, by peritoneal currents which carried it towards the lymphatics of the diaphragm; that particles of carmine, for instance, injected into this cavity could first be recognised in these lymphatics and next in the mediastinal glands. Case 16 would appear to support the truth of these observations. Some infective material evidently found its way into the abdominal cavity in this case. The general cavity escaped in consequence of the measures adopted—accurate closure, followed by free purgation—and general peritonitis was averted, but a subphrenic abscess formed which required evacuation.

The difference in the intensity and duration of symptoms in various cases is noteworthy. Although in the majority some direct connexion between traumatism during labour or the poison of gonorrhœa could be detected, and a long period of invalidism traced between the date of infection and that of operation, during which symptoms were constantly more or less present, this was not the fact in all. In Case 16, already referred to, although two large pus sacs were found, no symptoms at all had been noticed and the patient declared herself to have been in perfect health until 14 days before admission to the hospital. (See also Case 23.)

One point in diagnosis is worth reference. Some years ago Cleghorn of New Zealand drew attention to the presence of a pulsating vessel in the fornix on the same side as an ectopic pregnancy and suggested that this would be found to be a differentiating symptom, marking such cases off from others in which a similar pelvic mass could be detected. But Case 5 would appear to show that any mass which from its position, or in consequence of superior adhesions limiting its upward development, is forced to press outwards and downwards, so as to displace the uterine artery in the same direction before it, will produce this vaginal pulsation; so that the value of this symptom as indicating the presence of ectopic pregnancy is greatly discounted.

The question of how best to attack these collections of pus, especially in acute cases, is a difficult one, and one in which the dispute between what may be called abdominal and vaginal operations reached its highest point. There seems to be little doubt that in an acute case when the virulence of the contained bacteria is still great, the removal of these sacs through the abdominal wall is extremely risky. Adhesions are plentiful and firm and the omentum has often been utilised to close some point of leakage such as the abdominal end of the Fallopian tube. Should the adhesions be sufficiently light to justify an attempt at peeling them off it is quite possible that a sudden gush of pus may signalise the removal of this safeguard, and this pus may reach healthy peritoneum and light up general peritonitis; such an escape of pus occurred in Case 15. Even if this does not happen the walls of the containing tube are greatly thinned by their distension and may give way at any stage during their enucleation. This occurred in Cases 7, 11, 12, and 16. Of course, the Trendelenburg position, by enabling the surgeon previously to pack in sponges which will absorb these fluids at once, has greatly minimised this danger, but it cannot be said to have removed it entirely. It is obvious that separation has to be done in advance of the sponges. If they could in all cases be previously packed below there would be no posterior separation to be done; and not only is this so, but occasionally the amount of fluid which suddenly escapes is so great as immediately to soak through the comparatively thin sponge, which alone can find space in which to lie, and so comes into contact with the raw surfaces produced and even with the unaltered peritoneal surfaces above. This risk is, of course, practically unimportant should the case be chronic, the bacteria dead, and the escaping liquid merely fattily degenerated débris floating in a sero-purulent fluid; but who can determine this beforehand? And if the bacteria are not dead, if the escaping fluid is still infective, possibly virulent, the risk is very great.

It would appear to be far safer to open these acute abscess cavities from below through the vagina. Case 11 was such a case as that referred to in the last paragraph. In Cases 17 and 21 the time which had elapsed since the date of infection was so recent and the patients themselves were so acutely ill that there could be little hesitation as to the route to follow. The pus was evacuated through the vagina and recovery was prompt and rapid, whilst the other patient (Case 11), whose pus sacs were enucleated through an abdominal opening, died. Some of these collections can be felt from the vagina and then, too, there is but little hesitation in coming to a conclusion; the real difficulty arises when they cannot be felt from this canal, when adhesions above prevent their descent into Douglas's pouch, and their removal in this direction necessitates the contemporaneous removal of the uterus also before they can be reached. Should there be any hesitation in doing this? Usually the inflammation which has produced the tubal or ovarian abscess has also so disorganised the uterus that its preservation simply means retention of a perpetual menace to the sufferer's health; if both tubes are mere pus sacs the uterus can never again, one would imagine, be of any service and may be sacrificed without any real loss. Even if this be admitted the difficulty in some cases may not be wholly removed. In one case, not in the present series, after removal of a fibroid uterus with two pus tubes the right ovary was found separated from the rest and adherent to the fascia over the psoas muscle in such a position that it could not have been reached and it is doubtful if it could even have been detected through the vagina even after the clearing away of the uterus; and another difficulty arises when the operation has to be undertaken, as it occasionally has, in women who have never borne children, whose vagina is therefore undilated, and in whom the hymen itself may be present. It is difficult to understand how the condition arises in such cases. One of the usual causes, septic infection after a labour or miscarriage, is obviously excluded in consequence of the anatomical conditions present. In many the suspicion of gonorrhœa seems to be equally impossible. Is it possible that masturbation in women may produce tubal inflammation? I am not aware of any cases which definitely prove this point; and, indeed, evidence which might settle the question would be extremely hard to elicit.

The duration of the operation in some of these cases is considerable. Although the time expended may be due to some extent to the personality of the operator it is not entirely so. Separations of adherent viscera, when these viscera contain septic material, as the intestines do, must be done cautiously and patiently. Undue hurry may easily lead to tearing of their walls and thereby the production of greatly increased and needless risk, whilst the duration of the work is also lengthened. In such cases the resultant shock is certain to be great. I have been much impressed by the notable effects produced by transfusion of normal saline solution in these cases. Case 22 undoubtedly owed its success to this measure; and I am inclined to look upon it, not only as filling the blood-vessels, which is its primary object, but as assisting markedly in the removal of any toxins rapidly from the system. But that it should be introduced into the veins of the patient is open to question. When necessity for it arises it requires to be done at once. By the very circumstances of the case the veins are empty, collapsed, difficult to find, and still more difficult to enter. Valuable time is lost in searching for, and then in introducing, the cannula *secundum artem*. It is far more easy, and therefore far more quickly effectual, to pass the hollow needle into loose connective tissue such as is found in abundance

beneath the breast or in the axilla; and, so far as I have
quickly utilised as it would be
vein. Moreover, if it is done
heat of the injection itself must
g effect upon the heart, lying
ot sure also, in order to gain the
second object, that of rapid dilution and removal of toxins, that it is repeated sufficiently often
number of
injections o
seems open
obtained;
may not carry into the system certain toxins from so septic a canal as the intestine which would be much better left outside. Such a possibility could not occur were the fluid merely absorbed from clean connective tissue.

Shock is, indeed, one of the greatest dangers immediately to be feared, and anything which lowers the vitality of the patient should be avoided if possible. Loss of bodily heat is one very potent factor in this direction. Most of our operations at the present date are carried out on metal tables. If these tables are heated sufficiently to remain warm during a long operation they must at first be uncomfortably hot. If they do not remain warm they will abstract heat from the patient lying upon them and so decrease his vital resistance. Many plans have been adopted to avoid this, but, so far as I have seen, without great success. If metal cases containing hot water are used they render that portion of the table which has to be raised in order to obtain
Trendelenburg position far too heavy. In this position a
the hottest point will be that towards which the wa
gravitates—that is, the shoulders, where it is not want
By dividing the metal case into several compartments t
may be avoided, but the whole thing is very cumbrous a
interferes with the sometimes rapid change of position required. Lately I have had a rubber bed constructed which is made up of a succession of transverse rubber cylinders containing hot water which has proved to be at once light, easily managed, and very effective. I feel certain that in numerous instances its use has made all the difference by preventing loss of bodily heat. In a case not many weeks since, in which the abdominal cavity was open for over two hours, the subsequent shock was extremely slight and recovery was correspondingly rapid.

CASE 1.—E, 25. Mrs.
fined six weeks previou
been attended by a mids
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reby to

CASE 2.—Book 1, 22. Mrs. ——, aged 46 years

patches. Death occurred on Oct. 7th. The temperature rose steadily after operation from 97° to 101° F. The pulse was never above 96, but the respirations quickened from 18 to 36.

CASE 3.—Book 1, 26. Mrs. ——, aged 23 years, was admitted on Oct. 4th 1894. She had one child four years old. There had been no miscarriages. Menstruation began at 11 years of age, the periods recurring every two to three weeks and lasting six or seven days. There was always pain before and during the period, chiefly felt in the hypogastrium. The confinement was tedious
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ing.

six months with pain before, during, and for two days following, the flow. The period now lasted from six to seven days. The last one, which had just finished, had lasted 14 days. The pain now spread over the sacrum and around both ilia. It also passed down the outside of the right leg as far as the foot. On the left side it followed the
course of the sciatic nerve
years there had been some
and worn until the last
in consequence of the pain
rhoids ever since the contir
marriage. This had greatly
been offensive. Bimanual
fundus of which was on a
superior iliac spine.
o right Fallopian tube was
nally complained of on both
lear. Operation (which had
of influenza) was performed
section was made. The right Fallopian tube was found to be thickened and adherent to the broad ligament and ovary, with which it formed one mass. The small intestine and omentum were also adherent to this. The tube and ovary were removed, the uterine end of the stump being covered over by peritoneum. The patient slowly recovered and went home in January, 1895.

CASE 4.—E, 175. Mrs ——, aged 37 years, was admitted on July 18th, 189
there had been no miscarriages.
she had amenorrhœa for nine mon
period, the menses had always be
her marriage. Since that time th
period had usually been three weeks. For the last three months there had been leucorrhœa for a day or two after the periods For the last three weeks before examination she had noticed a discharge from the rectum, at first jelly like, afterwards creamy, followed by throbbing sensations in the bowel after a stool This lasted for about five minutes and then gradually became less.
adherent to the
peeled off without
the left tube and
he abdominal wall
section contained

Mrs —— aged 31 years
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s old.
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before
n was
s had
been
had
ne was present at the time of the
ness on pressure over the right
lly a rounded, tense mass could be
felt on the right side of the uterus the body of which was pushed to
g was marked
performed on
. On median
ound greatly
containing offensive pus. The omentum and small intestine were adherent to it. This was separated and the tumour was peeled off the posterior surface of the right broad ligament The right Fallop
flakes of pus appeared in it and began on the sixth day to smell fæcally; this smell continued until the fifteenth day, the amount,
sixteenth

median abdominal incision was made, the
burg position. The left tube and
o abscess cavity firmly adherent to
firm adhesions were found on the
appeared to be healthy. Adhesions
were separated or tied and divided The right tube and ovary were peeled off the broad ligament and removed. The pelvic cavity was washed out with saline solution, dried by sponges and the abdominal wall was closed without drainage The menstrual period appeared on the 11th and lasted until the 16th, being followed by a brownish
disappeared on the 17th and the dis-
patient was discharged on August 1st
marked retroflexion and a tender and
tion was done and she was discharged
weeks later.

CASE 7.—Y, 80. Mrs. ——, aged 36 years, was admitted on August 28th, 1896. She had had three children and one miscarriage. When 16 years old she lost blood continuously for six months. She married when 18 years old and was first pregnant six and a half years after marriage. Her first child was born 12½ years previously, the labour being normal, with a good convalescence. A miscarriage occurred at five weeks 11½ years previously. The patient had "*inflammation*" for 13 weeks *following*; she got up for two days and had to go to bed again for 16 weeks. Her second child was born ten years ago, premature, at eight months. When six months pregnant she flooded and the vagina was tamponed. She nearly bled to death at the confinement. The child was born at 6 A.M. and the placenta came away itself at 9 P.M. Her third child was born *eight years ago at full time. For the first three months of pregnancy the menses appeared regularly. The membranes ruptured three days* before the birth of the child. She was in bed for a month afterwards with "windy spasms." Since this confinement there had been occasional dribbling of blood for five or six weeks at a time; this had been most marked during the last 12 months. The patient complained greatly of flatulence. There was no frequency of micturition. 14 days before admission she had a rigor; this had recurred several times since. Bimanual examination showed an apparently normal uterus, with a firm elastic mass on the left side, springing from the uterine fundus. On Oct. 2nd a median incision was made below the umbilicus, the patient being in the Trendelenburg position. On the left side of the uterus a very tense, adherent tumour of the size of a small orange was found. This was formed by the ovary which was converted into a pus sac, with very thin walls, which ruptured during separation. The pus was caught by sponges which had been packed in below. The left tube was closed at both ends and was distended by clear amber-coloured fluid. Both were removed and the abdomen was closed without drainage. Convalescence was delayed by uterine hæmorrhage which set in on the fifth day and lasted for six days, *when the uterus was dilated and curetted, some soft placenta-like* membrane being brought away. From this time improvement was rapid and continuous.

CASE 8.—L, 48. Mrs. ——, aged 33 years, was admitted on Nov. 14th, 1896. There had been one confinement seven weeks previously to admission. Rigors supervened on the *third day. Pain then was* felt in the right inguinal region. On admission bronchitic râles were heard all over the chest. Bimanually the uterus was found *to be fixed, with* two large, rounded, elastic, fixed masses, one on either side. Operation was postponed in order, if possible, to eliminate the bronchitis before this was done, but as the temperature rose steadily from 100° F. on admission to 103° with morning remission it was thought best not to *delay further. Operation was performed on Nov. 24th*, the patient being in the Trendelenburg position. A median abdominal section was made. The omentum was thickened and widely adherent. The appendix was adherent to the left ovary which was deeply embedded in firm adhesions. About an inch of small intestine was also *adherent and was separated with some little difficulty. After loosening* all these the left ovary was found to contain two abscess cavities, one in the centre and one near the surface. This was *removed with* the left tube which seemed merely inflamed and was not much changed. The appendical mesentery was matted up in such a way that two tubes appeared to spring from the cæcum. The appendix was removed and the stump was covered by peritoneum. The right tube *was very adherent, buried in adhesions, and greatly swollen.* After it was sufficiently loosened so that it could be brought up towards the surface sponges were packed around it and it was opened. About an ounce of pus was evacuated and then the empty tube could be further loosened, tied, and removed. There was free bleeding from the separated adhesions for a time but this soon ceased. A glass Keith's tube was placed in Douglas's pouch and the abdominal wall was closed around it. The temperature sank to normal during the night and remained so until the morning of the 26th, when it rose again to 101°, reaching 103·6° at 10 P.M. On the 27th it sank to 100° and continued below this until just before death, when after sinking to 97·4° it rose again to 102° on Dec. 5th, when death ensued. The pulse gradually and steadily *increased in rapidity from* 128 after the *operation* to 170 before death. The respirations ranged from 24 to 60. There was persistent and very distressing coughing from the time of the operation. Pus was found in the fluid withdrawn from the tube on the 26th and fæcal matter the same night. This became more and more in quantity up to the time of death. The bowels, however, *moved freely from Nov. 26th*, flatus having passed first on the 25th. Urination was free but pus was seen in the urine on the 26th.

CASE 9.—W. 104. Mrs. ——, aged 38 years, was admitted on Oct. 21st, 1897. See had had three children but no miscarriages. The eldest child was aged 15 years. *The perineum was torn.* The youngest child was aged 10 years. The last confinement was very painful. Every pregnancy had been associated with severe vomiting, sometimes of blood. The last child was suckled for 15 months. For six months the patient suffered from great pain in the hypogastrium and on the left side, especially on exertion. Since that time the pain had been less, though always present to some extent until five months before, when it again became more intense. She had never been wholly free from pain except at night, when she slept from 10 P.M. to 3 A.M., after which the pain prevented further sleep. In 1893 she consulted a surgeon who found retroversion and prolapse. The version could not be remedied even with a sound under chloroform. Pessaries and tampons were used. Relief was obtained by Thomas's glycerine pessary, which prevented the otherwise constant bearing-down, but produced frequent desire to urinate. Urination was painful on commencement; it would stop suddenly and then go on again. After urination there was pain for about an hour. Menstruation was regular, but the pain was always *worse at the period*, and this accentuation had been more marked since the pessary had been worn. She suffered also from piles, which bled a good deal.

CASE 10.—N. 103. Miss ——, aged 47 years, was admitted on Nov. 25th, 1897. She had always been regular, with some premenstrual pain. *She had complained for some months of pain in the* hypogastrium; this was dull and continuous, and from time to time there was acute pain on the left side, which passed down the thigh, mainly in front, along the course of the inner and middle cutaneous nerves. There was undue frequency in micturition and the pain was sometimes relieved and sometimes *increased by the act.* It was difficult to get any clear account of her symptoms but the acute pain was associated with vomiting. There had been habitual constipation. Recto-bimanual examination showed a virgin uterus, with an elongated elastic mass by the side in the position of the left Fallopian tube. This was extremely tender. The hymen was intact and the vagina was narrow. On Dec. 2nd operation was performed and commenced from the vagina. The bladder was separated and the uterine arteries were tied. The patient being turned into the Trendelenburg position a median incision was made. The small intestine was adherent to the anterior peritoneal wall. The tubes and ovaries were matted together and covered by adherent omentum. As it was evidently futile to attempt separation by this route and there existed a large *collection of* fluid in the left tube the patient was replaced in the lithotomy position and with great difficulty, owing to the narrowness of the vaginal canal, the uterus was removed. When the peritoneum was *opened about a pint of viscid orange-yellow fluid escaped from a cavity with smooth walls on the left side. This cavity and the vagina were* filled with iodoform gauze. Recovery ensued and the patient was in good health in April, 1904.

CASE 11.—Book 1, 83. Mrs. ——, aged 2
Jan. 17th, 1898. She had had no children
had never enjoyed good health and had ha
of age which left her ailing until 20 years ol
from anæmia. Later she had fair health until six months after her marriage, three years before; then she had "swelling of the ovary." In October, 1895, she contracted scarlet fever and was in a sanatorium for seven weeks. In September, 1896, she was chilled whilst at the seaside; a menstrual period occurred soon after and the flow was scanty and clotted; there was not much pain at that time but being constipated she took some senna which produced diarrhœa a
pain. This pain was most intense during the
wards; it was now not so continuous but when
as severe as at first. About a month after the pain began she commenced to lose weight; this improved a little on going to the seaside again in February, 1897, but fell off again. She had been confined to bed for the *last ten months and for nine months had had night* sweats. The left leg had been swollen, with some difficulty in full extension. The right was normal in size and movement. At the time of examination the patient was much emaciated with a hectic colour on the cheeks. The edge of the liver projected one and a half inches below the costal margin, was smooth, and without bosses. The spleen was not enlarged. Bimanually the uterus was found to be fixed with a firm, rounded, elastic mass on either side of it. Operation was performed on Jan. 20th, 1898, the patient being in the lith
narrow. The bladder was sepa
fornix was opened. This latter i
up a cavity containing about two
out. *The uterus* was *split compl*
either side down. The vagina was plugged with gauze. On opening the abdomen, after the patient had been placed in the Trendelenburg position, a few clots were found over the line of division in the vesico-uterine fossa. A loop of small intestine was found adherent to the *bladder and to the left iliac fossa and the adhesions, which completely* shut in the uterus and tubes, were so firm as to require division by the scissors, leaving a longitudinal raw surface on the bowel. An attempt was then made to draw upwards the uncovered uterus, but neither half would move. A large pus sac was seen on the left side. This was enucleated but was torn slightly in the process, fluid escaping on to a flat sponge placed behind. When this was done the corresponding *left half of the uterus could be brought up* and removed. The right uterine segment also became moveable and was taken away with fair ease. The right ovary was then shelled out of the bed of adhesions in which it lay and was found to be caseous. The whole pelvic cavity was then dried out and a large gauze drain was drawn through into the vagina, *its upper part being packed* into the pelvis in order to cover the raw surfaces which were unavoidably left. All vessels as divided were tied with fine silk and cut short. The pelvic peritoneum was left open, the gauze projecting through it; the abdominal wall was closed. There was very great shock. Transfusion and hypodermic injection of suprarenalin were given during the *operation*, and the latter steps of the operation were greatly hurried. There was no radial pulse on completion, and transfusion was again carried out on her return to bed, whi again given hypodermically. She recover e of events seemed favourable, but 24 hours again and *in spite* of fresh transfusion she died.

CASE 12.—Book 1, 73. Mrs. ——, aged 31 years, was admitted on May 5th, 1898. She had had no children or miscarriages. Menstruation had commenced at 14 years of age. She was suffering from typhoid fever at the time. She had never been irregular. The period occurred every three to four weeks and was always painful, but latterly *this pain had become more frequent and more intense.* The pain was felt in the hypogastrium and over the sacrum and often passed down the front of the left thigh, never the right. She had suffered from leucorrhœa, but never more severely at any one time than another, and there had never been smarting on urination. Bimanually the uterus was found of normal size, but fixed between two elastic masses, one on each side of the pelvis, the one on the left being much the largest. Her husband strongly objected to the removal of more than one ovary and tube if it could possibly be avoided. Operation was performed on May 6th, the patient being in the Trendelenburg position. A median abdominal incision was made. The *omentum* was lightly adherent to the uterus and left Fallopian tube and separation was easily carried out without any necessity for ligature. The left tube was coiled inwards and downward was con-
verted into a pus sac. The tube reddened,
and occluded. The whole mass was ouch and
one portion yielded during separation, giving exit to a thin brownish fluid which was caught upon sponges which had been packed in behind. After removal the opposite tube was inspected. It was swollen and occluded. The ovary, however, appeared to be healthy and, respecting the husband's wishes, they were *both left.* Recovery was rapid and uneventful and up to the present, six years after, no further trouble had been experienced from the very doubtful tube which was left behind.

CASE 13.—W, 84. Mrs. ——, aged 31 years, was admitted on May 6th, 1898. She had had no children. She had had *menorrhagia* for three periods followed by offensive purulent vaginal discharge. There were pain all over the *abdomen* and tenderness on pressure over the left ovary, together with some gradual abdominal enlargement. *Colotomy* was performed with the patient in the Trendelenburg position. The omentum was adherent to the uterus and *left tube.* The left tube and ovary were converted [illegible] sac and were removed. The right [illegible] ded; this was not removed. The [illegible] Recovery ensued and the patient [illegible]

CASE 14.—I, 172. Mrs. ——, aged 33 years, was admitted on Oct. 23rd, 1898. She had been married 11 years; she had had no children or miscarriages. The menses, which had commenced at 13 years of age, had been always regular. The flow had always been free, lasting for from five to six days. Before marriage black clots were often seen. Since marriage these as well as "lumps of flesh" were noticed. Before marriage there was sacral pain, not so much since. With the period there had always been pain at first, which was relieved by the flow. For the last eight years the pain had been more severe in front in the hypogastrium, at first mainly on the right side, but during the last few months this had changed more to the left side. For the last few months the amount lost had been rather less until the last period which commenced on Oct. 18th; this had been much more copious than usual. There had been three occasions on which the loss amounted to actual flooding [illegible] broad ligaments. The diagnosis made was that of uterine myoma with possibly pyosalpinx or broad ligament outgrowths of the myoma. Operation [illegible] ned on Oct. 27th [illegible] arteries [illegible] ndelen- [illegible]. The [illegible] inx on [illegible] ended, [illegible] The [illegible] order to gain room. The left ovary and tube were then enucleated from very firm adhe[illegible] the right side the tube was [illegible] to close the pe[illegible] abdominal wall was then entirely closed. A hypodermic injection of strychnine was required during the operation. There was very marked shock. Convalescence was slow but ultimately the patient recovered completely.

CASE 15.—S, 109. Mrs. ——, aged 4[illegible] was admitted on April 3rd, 1899. S[illegible] The only child was born 21 years ago. [illegible] The menses had commenced at 18 ye[illegible] to the birth of her child, throughout lactation, and since. The child lived for six years and died from phthisis. The labour was a lingering one but otherwise it was normal. She dated her ill-health from this confinement. She had been losing flesh for over three years. Two years before she began to feel worse and noticed a painful lump in the right iliac fossa. From this time there had been constant heaving and regurgitation of blood. Vagino-bimanual examination detected a rounded mass of the size of an orange in the [illegible] egion, which under chloroform [illegible] right uterine cornu, whilst th[illegible] above Poupart's ligament and [illegible] ment [illegible]. On [illegible] position, the [illegible] man line. The omentum was found [illegible] the pelvis and to the right Fallopian [illegible] voluted mass, with a surface which [illegible] intestine, situated above and to the [illegible] pelvic brim and the peritoneum [illegible] tend into Douglas's pouch, to it [illegible]. On attempting to peel off the [illegible] hough some opening in the tube [illegible] probably not all, of this was caught by sponges; the tube was enucleated as [illegible] abdomen was washed out by saline [illegible]

[illegible] omewhat fixed [illegible] nuous with the [illegible] t a polypus had [illegible] previously. A [illegible] de and vaginal [illegible] l on Sept. 19th [illegible] method was performed on the [illegible] ring Douglas's pouch, owing to [illegible] herefore separated in front and [illegible] plastic [illegible] in the [illegible] was united and gauze was placed in ocum between the divided [illegible] ents. Some slough[illegible] y kept in check by [illegible] tient recovered and [illegible] 9.

[illegible] on Jan. 24th, 1900 [illegible] no children or mis[illegible] riage. Her husband [illegible] as usually perfectly [illegible] between the periods. She had never had any other discharge. Her present illness [illegible] with sudden pain in the right iliac [illegible] The pain was located by her in the [illegible] y's point. There was no diarrhœa or [illegible] ous health, she said, was always good. [illegible] the patient was found to be a stout woman with a healthy colour. She lay on her back with both knees drawn up. The abdomen was irregularly distended by a firm rounded mass which extended from the right inguinal region to beyond the umbilicus and across the median line. This was dull on percussion from Poupart's ligament upwards. It was very tender on pressure. Per vaginam its lower surface [illegible] it did not bulge in [illegible] the Trendelenburg [illegible] from the pubes to [illegible] omentum was found [illegible] the left half of the [illegible] attempt was made to [illegible] and to bring it out of [illegible] rous pus spurted out [illegible] On the right [illegible] other was another [illegible]; this also was [illegible] separate. After [illegible] ttached to the [illegible] The abdominal [illegible] ube was left in the [illegible] that some of the pus from the first mass might have soiled the wound surfaces, this was removed on the third day. It was doubtful whether [illegible]

[illegible] in size. [illegible] posterior [illegible] from which [illegible] 's was packed [illegible] which before operation was [illegible] ot again rise above normal. The [illegible] irrigation was used daily. She [illegible] on Jan. 31st.

CASE 18.—Mrs. ——, aged 44 years, was admitted on Sept. 9th, 1902. She had been in perfect health until her marriage. Soon after marriage she complained of vaginal discharge with smarting on urination. Since her marriage she had never been well [illegible] the la[illegible] The o[illegible] to be [illegible] ing in [illegible] The small intestine was found adherent all over the pelvic floor. The abdominal wound was closed. The patient was again placed in the lithotomy position and the uterus was removed by Landau's method. It contained two small fibroids. On opening the peritoneum several ounces of foul pus escaped, the main amount on opening the utero-vesical space. After irrigation three rubber drain tubes were placed and packed around with gauze. The patient was greatly collapsed and died the next day. At the post-mortem examination foul pus was found in the pelvis. Pus was also found between the duodenum and the common bile duct, between the superior surface of the liver and the diaphragm, and in a pocket formed by adhesions in the right iliac fossa.

[illegible] Feb. 12th, 1903. [illegible] sion. It recurr[illegible] operation was performed on April 11th. The patient being placed in the Trendelenburg position a median abdominal section was made. The omentum was found strongly adherent to the left Fallopian tube which was swollen, closed, and [illegible] adherent to some of the [illegible] The whole mass was so [illegible] d to be begun by division [illegible] tube removed by dissection outwards. When this was removed the right tube was found equally inflamed and convoluted but not so swollen. The right ovary was becoming cystic; both were removed. Many and tough adhesions existed in Douglas's pouch between the uterine fundus, the tubes, and the posterior pelvic peritoneum. The abdominal wall was closed without drainage by tied suture. Recovery was uninterrupted.

CASE 20.—Mrs. ——, aged 32 years, was admitted on March 31st, 1903. On admission she was very ill and but little history could be obtained except that she had been very feverish for over 14 days. She complained chiefly of great pain in the hypogastrium and over the sacrum, passing down both legs. There was also pain on urination. The temperature on admission was 101° F., reaching 103° before operation. The pulse was 112 and the respirations were 44. Bimanual examination showed a large fixed uterus which was pushed over towards the l [illegible] a firm, extremely tender mass attached to, [illegible] it viscus, in the position of the right Fallopian tube; this did not [illegible] were no pulsating vessels in either [illegible] on April 2nd, the patient being [illegible] medium incision was made. The patient had passed urine before coming into the theatre but the bladder was found still distended and consequently carried upwards into the line of division. A catheter was passed and more than a pint of urine was drawn off. After this the bladder sank to its normal position. The omentum was found adherent to the greatly swollen uterus and on separating one of the adhesions some pus escaped. The pus appeared to come from an abscess in the uterine wall. Both tubes were tensely swollen, reddened, and œdematous. On the right, the tube was separated from the pelvic brim, to which it was firmly adherent, and a swollen, multilocularly cystic ovary was brought up. On separating the tube the bladder, which was intimately adherent to it, was opened for about a quarter of an inch and some clear urine escaped; as sponges had been previously packed into Douglas's pouch however, probably no harm was done. The opening was at once closed. The uterus being evidently as thoroughly infected as the tubes, the whole was removed in the American manner, except that the cervix was also taken away, the vagina was opened, and the left tube and ovary were removed from below upwards. The ends of all ligatures were drawn down into the vagina on each side of a roll of gauze and the pelvic peritoneum was partially united over it. By this time, in spite of transfusion and hypodermic injections of strychnine, there were signs of great collapse. The abdominal wall was closed entirely by through-and-through sutures. Transfusion was repeated twice to the extent of two and a half pints each time subcutaneously during the next 24 hours. The strychnine injections were also repeated. A catheter was left permanently in the bladder. Transfusion was again repeated on the 3rd and 4th. There were extreme restlessness and persistent diarrhœa from the second day, flatus being passed during the first night after one dose—three grammes—of calomel. The temperature reached 104° on the third day. The pulse was 140 and the respirations were 30, the latter being of the Cheyne-Stokes type. On the fourth day she was evidently septicæmic; on the fifth day the temperature sank to 99·8°. The pulse was 120 and the respirations were 52. The diarrhœa still continued, however, and she died early on the sixth morning. At the post-mortem examination pus was found in the pelvis, the right side of which was sloughing. Both pleuræ and the pericardium contained several ounces of brownish serum. Both lungs were congested, bluish, and collapsed. The abdominal wall had yielded and at the upper part of the wound the small intestine was close below and adherent to the skin. The small intestine lay in transverse rows which were all adherent to the anterior wall, the lower coils to the pelvis. One coil was reddened and more firmly fixed to the pelvis on the right side. On separating the coils in the hypogastrium some turbid serum escaped from between them. The bladder was watertight and stood a full pressure of water from the main. The gauze vaginal drain had evidently not been efficient in clearing the pelvis.

CASE 21.—Mrs. ——, aged 32 years, was admitted on Sept. 1st, 1903. She had had no children or miscarriages and had been married nine years. The menses began at between 17 and 18 years of age and were always painless, but never very free. She was always regular whilst they lasted but since her marriage the amounts lost gradually diminished and for the last few years she had had amenorrhœa. Her health was perfect until her marriage and she remembered a sharp attack of pain and smarting on micturition soon after that event. Five weeks before admission she had a sudden attack of severe pain in the hypogastrium, accompanied by vomiting, which had continued more or less up to the time of her entrance into the hospital. At that time she complained chiefly of pain and swelling in the hypogastrium with some difficulty in urination. The abdomen contained an elastic defined swelling in the hypogastrium, which extended into both iliac fossæ and was very tender. The breasts were similar to those of a virgin. The cervix was carried high up. In front, between this and the bladder, was a soft elastic mass which bulged slightly into the vagina. No fluctuation could be felt in it and it was very tender to the touch. Operation was performed on Sept. 2nd, the patient being in the lithotomy position. Posterior colpotomy revealed a small apparently unaltered uterus with a large mass above and in front of it. An incision was then made in front of the cervix and over the projection noted. This was deepened for about one inch with no result, but a forceps pushed onwards in front of the uterus entered a cavity which on opening the blades of the instrument discharged several ounces of offensive grumous pus. The opening was widened, the cavity was washed out, and two drainage-tubes were introduced. These tubes were kept in position for nearly three weeks, as it was found that when they were removed the bladder acted as a valve, shutting the opening, and the cavity was refilled. Through these daily irrigation was done. At last they were practically pushed out by the contraction of the space. The temperature, which was 102·6° F. before operation, steadily decreased to normal and the patient went home on Oct. 3rd, no thickening of any kind being detectable on her leaving the hospital.

CASE 22.—Mrs. ——, aged 33 years, was admitted on Dec. 26th, 1903. She had had no children or miscarriages. Her sexual history had evidently been irregular. She, however, dated the commencement of her ill-health to the time after marriage. 15 years ago, however, she was in another hospital for flooding with tenesmus and some vaginal discharge. In August, 1902, she said that she had "inflammation of the womb." She was a thin, worn-looking woman, evidently in great pain, complaining of purulent vaginal discharge and [illegible] hypogastrium. The uterus was found to be fix [illegible] n elastic, rounded, fixed mass by its left side. [illegible] on Dec. 31st, the patient being in the Trendelenburg position. A median abdominal incision was made. The omentum was firmly adherent to the small intestine, uterus, and to the uterine end of the left Fallopian tube. When this was separated a loop of small intestine was found adherent to the posterior wall of the uterus and the left Fallopian tube. In freeing this, which had to be done by the scissors at the expense of the tube, some cheesy pus escaped from the latter. The bladder was separated off in front and the uterus with both tubes and ovaries, which were all greatly swollen and contained pus, were removed. The left tube was greatly elongated and passed down behind the broad ligament to the bottom of Douglas's pouch, to which it was firmly fixed. The right tube was short but closed and swollen. Its inner lining was inflamed and coated with thin clot. The ovary on this side was slightly cystic, some of the cysts containing pus. In the right broad ligament was an ulcerated opening leading into a small cavity, from which some foul granulation material was scraped away. An opening was made from this cavity into the vagina and a gauze drain was drawn through into that canal. The ligatures were all drawn through into the vagina and between them a gauze drain, the upper end of which was left just flush with the peritoneal surface. On the posterior peritoneum were some remains of what looked like part of the wall of a pus cavity. This was snipped away with scissors. When all was done there was left a very ragged-looking Douglas's pouch. No attempt was made to close the pelvic peritoneum. The abdominal wall was closed. The operation lasted two and a half hours. Transfusion was required on the table. For about two hours there was a great amount of collapse, restlessness, and abdominal pain. The last two were relieved by the hypodermic injection of morphine. Transfusion of two pints was again performed five hours later, not because of shock, but with the idea of diluting and more quickly removing any toxin formed. Nutrient enemata with brandy were given every four hours. There was some hæmorrhage from the vagina during the first 12 hours. The vaginal plug was removed on the fourth day. The patient rallied well and recovered completely, returning home on Feb. 16th, six weeks after the operation.

CASE 23.—Mrs. ——, aged 32 years, was admitted on June 2nd, 1903. She had had four children, the youngest being five years old. Her husband had been dead four years. She had had no miscarriages. All the confinements were normal except the last but one, nine years ago, when she was attended by a midwife, who had some difficulty in the removal of the placenta. All the children were healthy. Since her husband's death she had gone out charing in all weathers. Menstruation had always been regular except during pregnancies and lactation. The periods recurred always three days less than a month. There was always some little pain about the second day, the periods always lasted three or four days, and the amount was always moderate. One period appeared between the [illegible] ation, and this was entirely painless. [illegible] a bicycle and "kencked" herself, fe [illegible] but in a day or two she felt well again. [illegible] ll aching pain was first felt over the umbilical region; there was never any sacral pain. She was poulticed for three days and kept in bed, with the result that this pain disappeared, but it was succeeded by a gnawing sharp pain in the right iliac region. Bimanually the uterus was found enlarged with an elastic tender mass on the right side and behind. There was no tenderness or enlargement detected on pressure over the appendix. Operation was performed on June 15th, the patient being in the Trendelenburg position. A median section was made. On opening the peritoneum the uterus was found to be enlarged, with a large right Fallopian tube, the fimbriæ of which were closed and adherent to the ovary which was transformed into a small multilocular cyst, both being fixed by adhesions to the back of the uterus and the broad ligament. On the left side the Fallopian tube was swollen and its fimbriated extremity was closed. The left ovary was a mere pus sac. Both tubes and ovaries were removed and the abdominal wall was closed. The convalescence was uninterrupted and the patient went home on July 3rd about three weeks after the operation.

Manchester.

THE RED LIGHT TREATMENT OF SMALL-POX.

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AND

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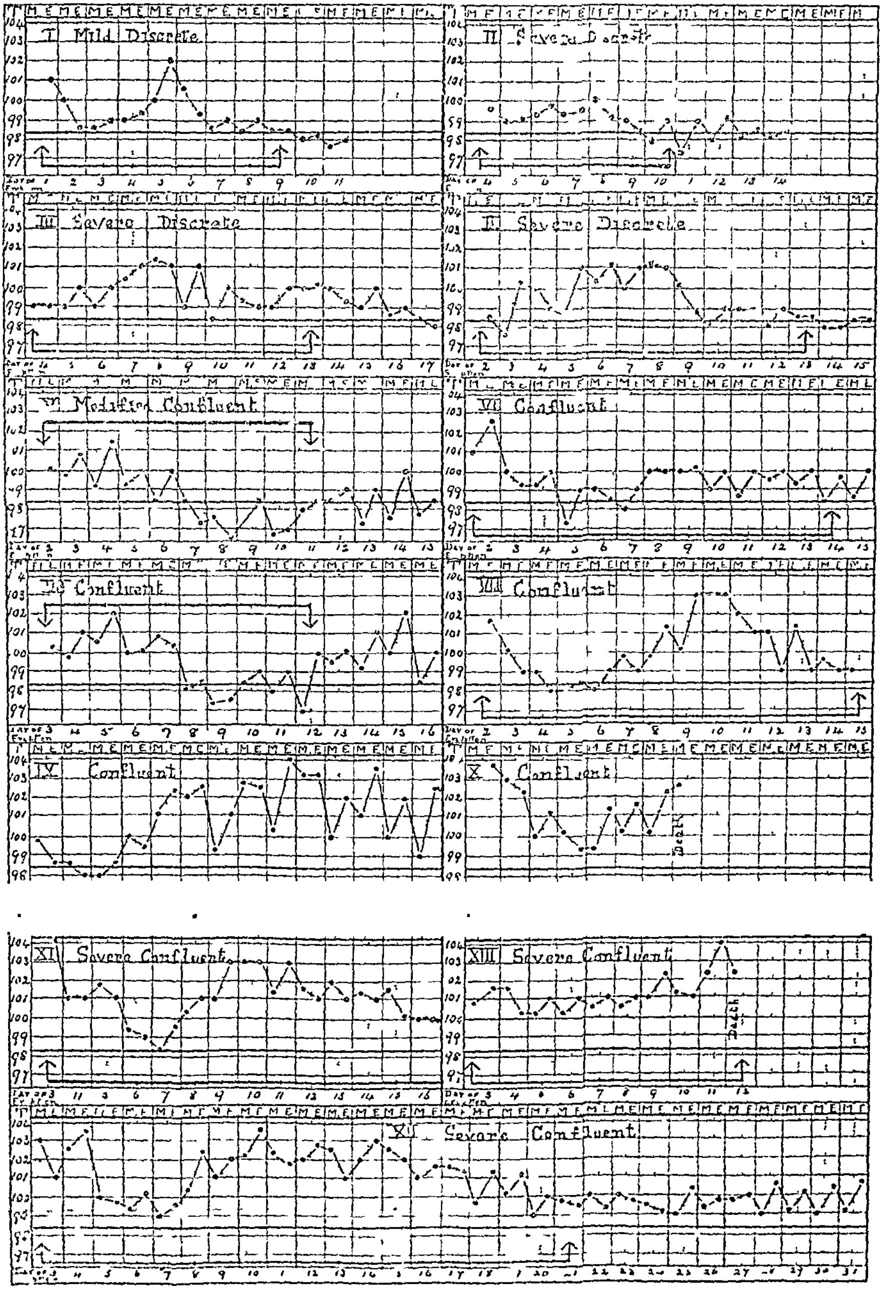
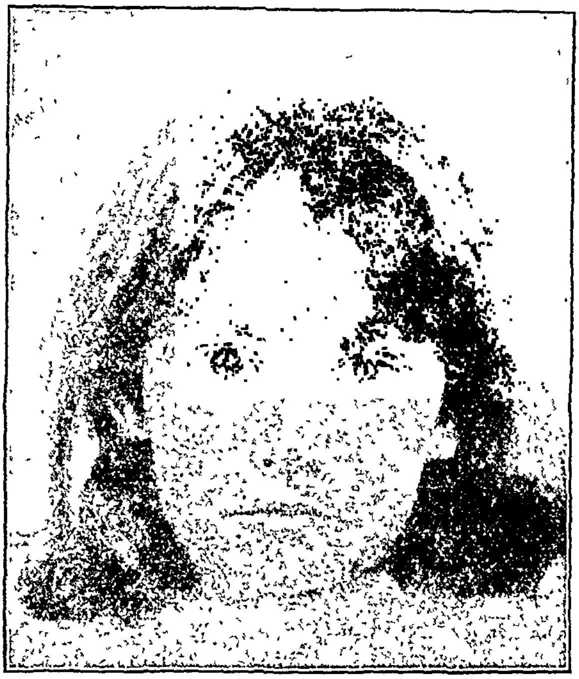
IN THE LANCET of July 30th, p. 287, an article was communicated by us on the red light treatment of small-pox. The article appeared without the temperature charts and photographs which were intended to illustrate it, but these charts and reproductions are now published separately as they furnish forcible evidence in favour of our contentions. The 13 temperature charts illustrate the 13 cases treated by us in red light and the numbers correspond with those in the tabular list of cases contained in the article, to which we refer the reader. The charts illustrate the point that treatment by red light did not prevent the fever of suppuration which was absent in only one case of modified small-pox (Case 5). It is to be remembered that as treatment in red light is claimed to prevent the fever of suppuration only no account is to be taken of pyrexia occurring before the fifth day of efflorescence. The duration of the treatment in red light is indicated on the charts by vertical arrows connected by a horizontal line. Of the four photographs reproduced,



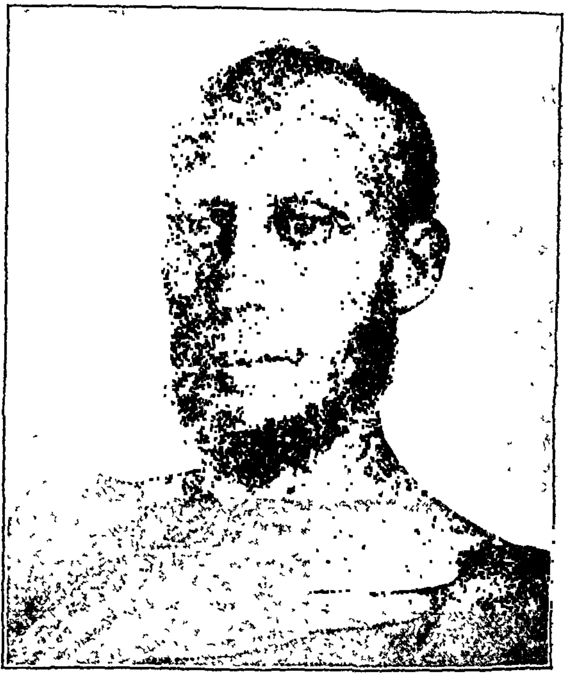
Temperature charts of 13 small pox cases treated by red light.

FIG. 1.



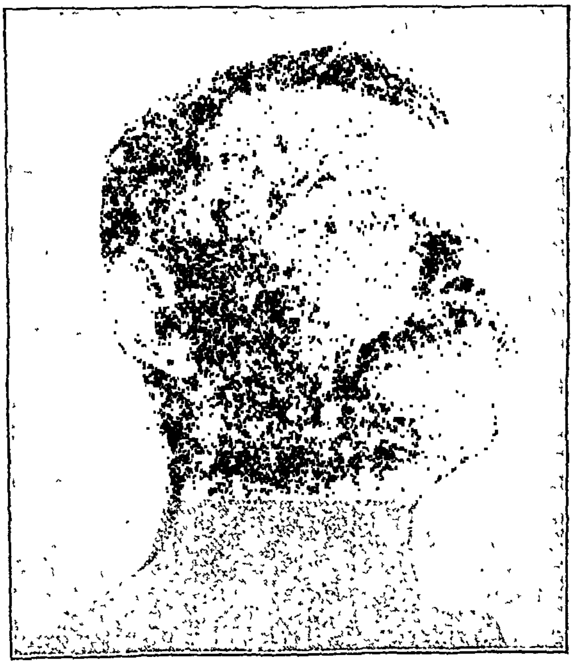
Case 8. Confluent small-pox. Vaccinated at time of invasion only. Convalescent after red light. Shows bad scarring.

FIG. 2.



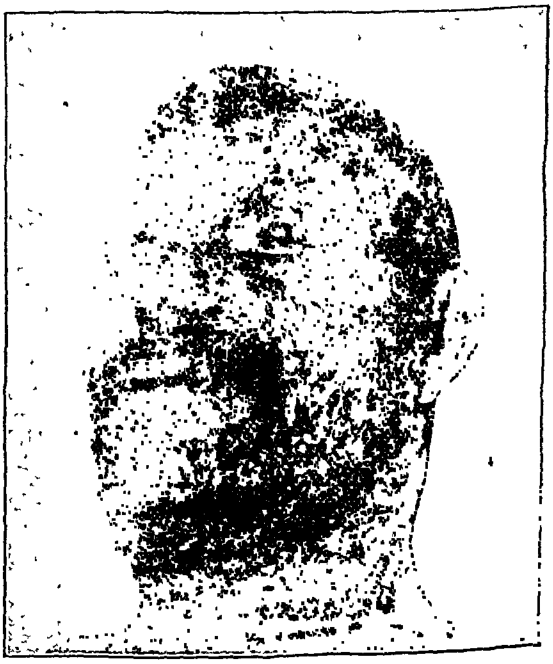
Case 11. Severe confluent small-pox. Vaccination doubtful. Convalescent after red light. Severe scarring and alopecia.

FIG. 3.



Case 12. Severe confluent small-pox. Vaccinated. Photographed before red light.

FIG. 4.



Case 12. Photographed during red light treatment in late stage of suppuration.

two (Cases 8 and 11) were taken during convalescence from patients who (contrary to the claims made for the treatment) were badly scarred In one of these cases (Case 11) there was also considerable alopecia Some other of the patients treated were scarred but it was not thought necessary to produce photographic records in further illustration of the point It was curious in regard to Case 8 that the child was admitted with her sister and that both had been vaccinated and developed small pox on the same days The two children had attacks apparently of comparable severity *Yet the child who was not treated in the red ward had a* modified eruption and recovered without scars, while her less fortunate sister, as may be seen by the illustration, was badly marked Two photographs of Case 12 are reproduced The first of these was taken before the patient entered the red ward and indicates the very early stage which the eruption had then attained The second was taken late in the pustular stage, on the ninth day of efflorescence, the patient being temporarily removed from the red ward for the purpose The two photographs therefore illustrate the fact *that although the treatment was begun early it wholly failed* (as in other cases) to prevent or to check the normal development of the lesions.

INSPECTION OF THE ANTRUM OF HIGHMORE.

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THE methods of diagnosing disease of the antrum at present in vogue give information only as to the fluid contents of the cavity but none as to the condition of the lining membrane if we except transillumination which occasionally indicates this to be more or less thickened The diagnosis is therefore based solely on the discharge and our management of antral suppuration may be compared to the treatment of otorrhœa without examination of the ear In dealing with the *antrum questions frequently* arise which make the inspection of its lining membrane desirable Thus there may be doubt as to whether pus is forming in the antrum or merely collecting there, whether the suppuration is limited to a small area or involves the whole lining membrane, and whether the changes in the lining membrane are slight and will probably yield to mild measures, or considerable and demand a radical operation Further, how else than by inspection are we to gain a true knowledge of antral affections? Is it not something of a reproach that although cysts and polypi are present not infrequently, as proved by post mortem examinations, we have no signs or symptoms by which to diagnose them during life? Lastly, are our remedial measures to remain as limited as heretofore? If we fail to check a discharge by simple means—e g , syringing, or insufflating powders—is our sole alternative method to be the radical operation entailing general anæsthesia and confinement indoors for at least a week? Considerations such as *these led me to seek an easy mode of gaining* access to the antrum, and having devised this to attempt the treatment of the diseased lining membrane by methods which had proved of utility in similar conditions of the mucous membrane of the nose and ear

The method of opening the antrum is as follows The gingivo labial fold beneath the canine fossa is painted with 20 per cent solution of cocaine. From four to six cubic millimetres of 10 per cent solution of cocaine are injected at two or three points in the anæsthetised area into the soft tissues over the canine fossa After three or four minutes have elapsed the zygomatic alveolar ridge is noted and commencing just in front of it an incision is carried forward along the gingivo labial fold for about from one and a half to two centimetres The facial wall of the superior maxilla is now exposed by pushing aside the investing soft tissues *with a raspatory The sharp trocar (Fig 1) is applied to* the bony surface at a point about five millimetres in front of the zygomatic alveolar ridge and about the same distance above the incision in the mucous membrane Having bored a passage large enough to admit the end of the blunt pointed trocar (Fig 2) the latter is used to make the full sized opening. By completing the operation with a blunt pointed instrument the danger of injuring the opposite wall is averted The trocars should be directed backwards, upwards, *and slightly inwards The operation is simple, often* painless, although occasionally somewhat so when boring through the bone, can be quickly accomplished, and has in my experience but one drawback—namely, the necessity for the submucous injection of cocaine I have tried eucaine in 20 per cent solution but sensation was not satisfactorily abolished

FIG. 1.

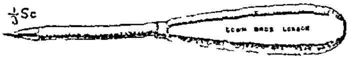
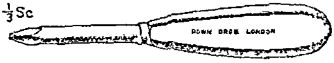


FIG 2



The landmark referred to, the zygomatic alveolar ridge, descends from the malar process to the alveolar border above the first molar I have recommended that the incision should terminate posteriorly just in front of this ridge, for when carried further back a small arterial twig is cut, if this escapes the bleeding is unimportant and no special measures for its control are necessary In exposing the canine fossa one is not likely to pass so high as the infra-orbital foramen, still it should be kept in mind The advantages of using large trocars to make an opening into the

r wound with greater
less discomfort to the
of chiselling

To obtain a good view of the antrum a speculum is necessary A large sized ear speculum or Zaufal's naso pharyngeal speculum cut down serves the purpose. An instrument such as that depicted (Fig 3) is, however, most satisfactory It resembles a large, elongated aural speculum of circular calibre with bevelled end The last provision facilitates its introduction and when in use gives a more extensive field of view and allows of the freer manipulation of instruments in the cavity An extra long speculum (Fig. 4) is useful at times—e g , when œdema of the lining membrane more or less occludes the lumen the opposing surfaces may be pushed apart by the instrument and the deeper regions inspected. To introduce the speculum the left forefinger is used to raise the lip and so cause the wound to gape The speculum is then passed in gently. If any difficulty is encountered it is best overcome by looking through the speculum, mopping away the blood if necessary, and then pushing aside the soft tissues with a probe or avoiding the bony ridge of the opening by altering the direction of the instrument

FIG 3

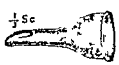
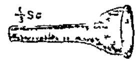


FIG 4.



On introducing the speculum the posterior part of the antrum directly meets the view By inclining the instrument in various directions and turning the bevelled part towards the region to be examined the lining membrane of the greater part of the cavity may be minutely inspected. The parts of which a view is unobtainable are the anterior wall and those portions of the other walls immediately adjacent, especially the roof The ostium maxillare is usually not seen owing to the inner wall being viewed in perspective, but its position is easily determined by a *right* angled probe under control of the eye If the artificial opening were bored further outwards—e g , over the zygomatic alveolar ridge—instead of in the canine fossa the ostium would be visible and a better view of the inner wall obtainable, but for general purposes the route already recommended is probably best, and it has the further advantages that here the bone is thinnest and the speculum is most easily introduced

Immediately after the operation having syringed the antrum if necessary, a look may be taken at its lining membrane The detailed examination is best postponed, however, till the following day, the wound meantime being loosely packed with iodoform gauze. On the first night there may be some pain but it is usually insignificant. Slight swelling of the cheek may be present after the operation or may develop more markedly on the following day or later, especially if the patient has been exposed to cold, and may last from a couple of days to a week. It is sometimes considerable, extending to the lower eyelid and causing marked disfigurement, but it is associated with comparatively little discomfort. At the patient's second visit the gauze is removed, the antrum is syringed, and the lining membrane is thoroughly examined by means of a strong, bright light reflected through the speculum.

Occasionally the patient complains of the speculum causing pain. This may be avoided in a large measure by painting the parts with cocaine and using a smaller speculum. The tenderness is usually referred to the lower bony edge of the opening on which the instrument presses. As long as it is desired to have access to the antrum the wound in the soft tissues must be kept open by means of packing. After this is discontinued it rapidly narrows and closes. Over 40 antra have been opened and inspected in the manner described. The various affections met with, the methods of treatment employed, and the results obtained are briefly recorded below.

Antra in which the lining membrane was normal or but slightly changed.—In several of these cases suppuration was apparently going on in the antrum, for pus was being regularly washed out by syringing through an opening made in the alveolus. On inspecting the cavity, however, the lining membrane seemed normal or but slightly thickened on the floor. In order to exclude the antrum as the seat of the suppuration it was packed with gauze and as the discharge of pus from the nose was undiminished clear evidence was thus afforded that the antrum was merely a reservoir for pus draining into it from the frontal sinus or ethmoidal cells. This method is therefore capable of yielding valuable information as to the source of pus issuing from the anterior part of the middle meatus. In one of the cases of this group the patient suffered from nasal polypi, the recurrence of which could not be controlled, and in another there was persistent and excessive swelling of the inferior turbinates without manifest cause. The antra in both of these cases were suspected on account of other signs and symptoms, but wrongly as inspection proved. In those cases in which the antrum was opened but the lining membrane found normal the wound was immediately allowed to close. A couple of stitches to keep the soft tissues together and prevent the entrance of food would perhaps have been advisable but none were used, the patient merely placing a small pad of gauze in the gingivo-labial fold over the wound while eating. In all of the cases healing took place without any untoward effect.

General thickening of the antral lining membrane.—The majority of the patients whose antra were inspected suffered from chronic antral suppuration and in most of these cases the appearances presented by the diseased lining membrane varied but little and consisted in a general thickening. The surface of the membrane was pale and smooth; ulceration was observed in no instance. The degree of thickening was not uniform; without exception it was greatest on the floor and least in the upper part of the cavity, a fact which emphasises the irritant action of pus lying in the antrum. In one case, in which the antrum had been previously syringed from the alveolus for several months, a nipple-shaped proliferation a quarter of an inch long projected from the floor, the passage for the cannula running through the centre of it. Besides being thickened the lining membrane was sometimes swollen so that adjacent walls, instead of passing into one another imperceptibly, met at an angle, and the point of the probe was lost sight of between the folds. A tooth was found lying loose in the cavity in two instances; one had been forced up in an attempt to extract it. In cases in which the suppuration might possibly have been of dental origin the floor of the antrum was carefully examined but without ever discovering the mouth of a sinus or other indication to support this view.

The antral suppuration in several of the cases presenting the above appearance was associated with nasal polypi or frontal sinus suppuration, or both, and in one instance with fœtid atrophic rhinitis. In these cases of chronic suppuration in the antrum attempts were made to check the discharge, either by modifying the diseased mucous membrane or by destroying it and encouraging the growth of a new lining membrane. Various medicaments were tried. Antiseptic powders were insufflated, boric acid, iodoform, iodol, airol, aristol, and europhen being in turn applied, but all without appreciable benefit. Packing the cavity with boric acid increased the discharge; with iodoform it was somewhat diminished. Liquid applications of an astringent or caustic nature—e.g., chloride of zinc, silver nitrate, or carbolic acid—were also repeatedly employed but proved inefficient. Of all medicaments tried chromic acid fused on the end of a probe was found to be the most useful. It had the additional advantage of being easily applied. Experience showed that it was inadvisable to cauterise more than half of the antral surface at a sitting. Where thickening was marked, as on the floor in many cases, the bead might be firmly rubbed over the lining membrane, but caution was necessary where the membrane was less thick, otherwise considerable pain might be suffered afterwards. In my later cases I found it best to cauterise lightly twice or thrice at intervals of a few days and to syringe out the cavity after each application with a solution of bicarbonate of soda. Usually on the second day following the cauterisation the surface of the mucous membrane that had been treated presented a dirty grey appearance and was found to consist of necrosed tissue which could be wiped or picked away more or less completely. Perfect healing required from two to three weeks and the membrane was then smooth, grey, and much thinner than before.

By means of chromic acid used in the manner described I was able to get the lining membrane into a healthier state and to diminish suppuration but unfortunately not to check it completely. The treatment was continued, as a rule, for not longer than three or four weeks and possibly if it had been persevered with cures might have been obtained. The difficulty, however, was to keep the opening free owing to the soft tissues constantly encroaching upon it. If this tendency to closure of the wound could be overcome without causing discomfort to the patient and easy access to the cavity maintained, excellent results might, I believe, be obtained. Curetting was also tried. This to be effective must secure the removal of the entire diseased lining membrane. I have found that it is not possible to operate thus without severe pain, even if only a small area which previously had been thoroughly painted with a 20 per cent. solution of cocaine is treated at a time. After a few trials, therefore, I abandoned the idea of curetting without a general anæsthetic.

Œdema and thickening of the antral lining membrane.—In a few cases œdema was the most striking change presented by the antral lining membrane. On introducing the speculum little or no lumen was found, the inner and outer walls of the cavity being swollen to such a degree as to meet. These swellings had a dull grey aspect and were yielding, elastic, and somewhat fluctuant, giving one the impression of a bag partly filled with fluid. On aspiration, however, no fluid was obtained and on incision there was no apparent leaking or shrinking. If the cavity were loosely packed with gauze the lumen on the following day was found to be greater and the œdema of the lining membrane was correspondingly less; and if the packing were repeated for several days the swelling gradually disappeared and less or more thickening alone remained. In the most marked cases of œdema of the antral lining membrane the discharge was usually of a muco-purulent nature and the prominent feature in the nasal fossæ was polypoid rhinitis, or polypi, sometimes of an obstinately recurrent character. After the œdema had subsided the lining membrane was treated with chromic acid in the manner already described. A decided opinion cannot be expressed as to the ultimate effect, but the impression gained was that the abnormal secretion from the antrum was diminished and that the nasal condition was improved.

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Cysts of the antral lining membrane —Cysts were found in the antrum in one case The patient was a young woman who had muco purulent rhinitis probably of a strumous nature with a tendency to recurrent polypoid proliferations of the middle turbinates On examining her left antrum the cavity was found filled with very tough mucus after the removal of which a large white cyst was seen close to the opening On incising it scanty pus and a quantity of thick mucus escaped Other cysts previously concealed were *now disclosed One was situated on the floor*, *a small flat* one sprang from the inner wall a moderate sized one hung from the roof, and the sac of a collapsed one was present on the outer wall The cysts were incised and chromic acid was applied to their lining membranes where accessible Shortly afterwards there was marked improvement in the nasal condition, but as both fossæ participated it is doubtful whether this can be attributed to the treatment of one antrum, the other having not been opened

Inspection of the antrum has revealed to me some highly *interesting conditions* but *as regards treatment I have no* sensational results to chronicle The ease and safety with which the method can be carried out justify its adoption as a diagnostic procedure On the other hand the results which I have obtained by the direct treatment of antral disease as described in this paper warrant only its reserved recommendation

Glasgow

THE VISUAL FIELDS IN TOBACCO AMBLYOPIA[1]

By N BISHOP HARMAN M A, M B Cantab
F R C S Eng

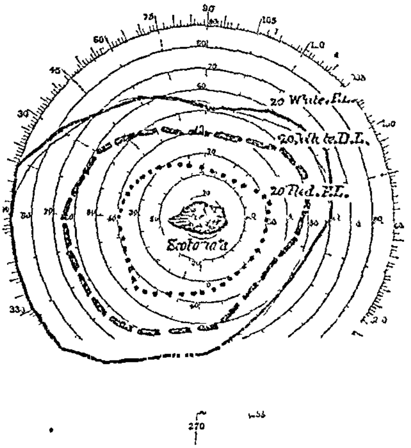
OPHTHALMIC SURGEON TO THE BELGRAVE HOSPITAL FOR CHILDREN
CHIEF CLINICAL ASSISTANT TO THE ROYAL LONDON OPHTHALMIC
HOSPITAL AND CLINICAL ASSISTANT TO THE OPHTHALMIC
DEPARTMENT OF THE MIDDLESEX HOSPITAL

We are accustomed to summarise the subjective symptoms of tobacco amblyopia as involving a loss of visual acuity the result of a central scotoma partial or complete, in the early stage simply a colour scotoma, later and in bad cases the scotoma may become absolute indicated by a loss of perception for small white objects centrally But—and this is a point often insisted upon—the outer limits of the visual fields are not contracted they extend to their normal bounds In short, there appears on the case paper 'tobacco amblyopia central scotoma for colours fields for white full Then there is the cardinal symptom of Arlt's original description—nyctalopia

The cases which I have investigated indicate that the
commonly received view of t
i e the vision is not affected
be diminished peripherally wh
used and perhaps also over the whole field At the same time the fields show a reasonable explanation for the frequently repeated assertion of patients that they see better in the dim light than in full daylight

The perimeter room at the Royal London Ophthalmic Hospital is a small room lined with glazed white brick on three sides, the fourth side is almost filled with windows, the large window space and the glazed bricks make the illumination of the room uniformly good The windows can be covered by black blinds but the room is not absolutely darkened as light passes in between the white window frames and the edges of the blinds and is diffused by reflection from the walls into an uniformly dim light With the room fully lighted I can read J 1 at a distance of about 1 2 millimetres from the central spot of the perimeter, when the blinds are drawn I can just read the same type when my chin is resting on the chin plate of the perimeter It follows that the light of the room has been reduced to about one tenth of its normal brilliance by drawing down the blinds

The method I have used in examining the visual condition of patients differs only from the usual procedures in that I have taken the fields for white objects twice first in the room fully lighted and again when dimly lighted with the *blinds drawn The visual acuity of the eyes is noted*, then the fields are taken for white and red with full illumination, and last the fields for white in the dim light I am well aware how easily a little unconscious bias may make a great difference in taking such measurements as those of fields I have therefore endeavoured to eliminate the personal equation by taking the measurements in as mechanical fashion as possible, thus by using a different pricker the fields for white in full and dim light can be taken on the same chart without the necessity of looking at the chart whilst the measurements are being *taken and in repeating* the examination of cases on dates subsequently to their first examination the earlier charts are not referred to



Left field of a male aged 50 years Vision failing from two to three months has difficulty in distinguishing a sixpence from a half sovereign R V = [illegible] L V = [illegible] No error of refraction other than presbyopia Smokes from

20 × 20 mm red object full in light

I have examined in this fashion all cases that have attended one of the cliniques at Moorfields during the past eight months to the number of 25 and by way of contrast there have been taken in the same manner the fields of some half dozen apparently healthy subjects smokers and non smokers In the healthy subjects the fields (examined with a 20 × 20 millimetre white object) were full both when the *room was fully illuminated* and when the blinds were drawn down—that is to say the diminution of the light to one tenth of its usual brilliance did not affect the perception of a 20 millimetre white object moving about the perimeter arc In the subjects of tobacco amblyopia of moderate severity the examination of the field for a 20 millimetre white object with the usual full illumination shows that the outer limits of vision are normal, and by searching the region of the macula with small white objects (one or two millimetres) there is only occasionally any indication of defect In making this central examination I found it advisable to correct any marked error of *refraction* When, however the light is diminished by drawing the window blinds a re examination of the fields shows a different result.

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[1] Demonstrated in the museum of the Ophthalmological Section of the British Medical Association Oxford, July 1904.

loosely packed with iodoform gauze. On the first night there may be some pain but it is usually insignificant. Slight swelling of the cheek may be present after the operation or may develop more markedly on the following day or later, especially if the patient has been exposed to cold, and may last from a couple of days to a week. It is sometimes considerable, extending to the lower eyelid and causing marked disfigurement, but it is associated with comparatively little discomfort. At the patient's second visit the gauze is removed, the antrum is syringed, and the lining membrane is thoroughly examined by means of a strong, bright light reflected through the speculum.

Occasionally the patient complains of the speculum causing pain. This may be avoided in a large measure by painting the parts with cocaine and using a smaller speculum. The tenderness is usually referred to the lower bony edge of the opening on which the instrument presses. As long as it is desired to have access to the antrum the wound in the soft tissues must be kept open by means of packing. After this is discontinued it rapidly narrows and closes. Over 40 antra have been opened and inspected in the manner described. The various affections met with, the methods of treatment employed, and the results obtained are briefly recorded below.

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Then there is what I would regard as a third phase or modification of the malignant cell. The nuclear fragments of the sarcoma corpuscle pass early into the blood and are grafted *as* metastases in distant viscera *But previously* to the *general* blood contamination they do *not* grow within the lymph glands though there can be no doubt that they are conveyed to these organs by the lymph *current. The vague* use of the word "sarcoma" for many species of malignant tumour beside that derived from the connective tissues—it denotes at different times primary cancer of the lymph glands, *growths* from *embryonic vestiges, ditto* from melanotic epithelial cells, even acutely growing carcinoma—tends to hinder appreciation of this law In this phenomenon—the destruction of malignant protoplasm by the lymph glands—and its proper investigation in the laboratory lies our best hope of practical improvement in the treatment of "cancer" by ultra surgical means

The idea that "cancer" in ordinary circumstances is an inherited malady was long since disproved by the exhaustive examination of *numerous* cases which amply demonstrated the utter absence of heredity from the history of the majority, whereas—and this is the most practical and most cogent consideration—a *very* definite exciting cause is invariably found to have been in operation in the case of the relatively small minority who record "cancer in the family"

A few years ago *the late* Mr Alfred Haviland attributed to "towns situated on rivers which periodically overflow their banks" special proclivity to cancer Inquiry showed that the local practitioners *at those towns*—Shrewsbury, *for* example—had no knowledge of any remarkable prevalence of malignant diseases in the neighbourhood, that any apparent excess in mortality depended *on* the existence of a large hospital or infirmary attracting people from the adjoining counties Cancer shows no relation to any condition of *soil, climate*, or *food*, excepting *alcohol* The chronic congestion of mucous membranes induced by immoderate use of the latter has a conspicuous share in the generation of epithelioma, the most prevalent *form* of malignancy in the male sex

The discovery that mammary carcinoma secondarily infects the bone marrow in *ordinary* cases and that the cells lie dormant in that tissue for from two to six years before the disease again becomes manifest[6] has not only explained the mysterious course of that prevalent cancer variety but has also revealed with accuracy the conditions under which a radical cure is feasible by operation

I would respectfully urge that this association should make an attempt to place our knowledge of malignant disease *upon a truly scientific* basis. I submit *there might well be* founded an association cancer committee the function of which should be to differentiate and to classify the numerous varieties *known as "cancer"* Secondly, to place on record authoritatively the facts we already know respecting their genesis and [illegible] t with the numerou[illegible] trary, in my humbl[illegible] o their eventual success All are at present very seriously hampered by the confusion which prevails, by the vague terminology, by the absence of any clear understanding as to what facts or laws are established and what yet remain to be elucidated. The example of a well-known transatlantic laboratory after *several* years' work—*lately reported narrowly to have* escaped the withdrawal *of State* aid because it had effected *nothing*—will accentuate this suggestion, which I venture to think *would* constitute a more *practical measure towards* the diminution of cancer mortality than any hitherto inaugurated

TABLE OF DISEASES KNOWN AS "CANCER," WITH THEIR MODE OF CAUSATION

I —*Non-Congenital "Cancer"*

No	Disease	Tissue origin	Cause
1	Epithelioma	Epithelium of mucous membranes, epidermis	Continued mechanical friction aided by previous congestion
2	Carcinoma	Cells of acinar secreting *glands especially* those of the mamma	Any conditions hindering or pre*venting the natural* [illegible]
3	Sarcoma	The spindle shaped cells of the connective tissue	Always *of traumatic origin*, the injury being usually single and sudden
4	Cylindroma.	Cells of tubular *gland follicles* in the alimentary canal	Same as those of carcinoma, chiefly *worry and trouble*
5	*Lympho*-carcinoma.	Cells of lymph glands Also of the *other* lymphoid tissues *such* as the marrow and tonsils	Mechanical injury aided by previous congestive conditions May follow a violent muscular strain (See 24 cases Cancers and the Cancer Process p 337)
6	Rodent ulcer	Cells of short hair follicles, chiefly those in the outer root sheath	Same as of epithelioma.
7	Myo-sarcoma	Nuclei of non striated muscle. Hardly known except in connexion with the uterus	Usually a sequel of long standing *uterine myoma*. The "soft oedematous myoma" of Lawson Tait is the primary *form*.
8	Glioma (rare and obscure)	The neuroglia, nerve corpuscles (Virchow)	Most of the so-called "gliomata" appear to be due to embryonic *vestiges*. Others are true sarcomata consequent on traumatism
9	Endothelioma (rare and obscure)	Endothelial cell plates	Doubtful

II.—*"Cancer" of Congenital Origin complying with the Theory of Cohnheim*

No	Disease	Tissue origin	Cause
10	Blastoma (exceptional)	Embryonic residua. Elements usually multiple and complex (See Cancers and the Cancer Process, Appendix A)	Apparently of spontaneous *development* and so markedly *differing from ordinary* cancer

Varieties or species of the preceding—Scirrhus (chronic or mammary

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[5] See causation table appended

[6] See cases detailed in Brit Med Jour, March 12th, 1892.

On mapping the peripheral region with the same 20 millimetre white object the outer limit does not reach out to the normal by 10 to 30 degrees, the loss being slightly greater in the temporal region than in the nasal; also, in searching the central region there is elicited a loss of power to detect white objects of one, two, five, 10, and even 20 millimetre size over a smaller or larger area according to the seriousness of the case.

The fields of these patients for red objects, taken with full illumination, show loss of central and of peripheral perception of the colour in varying degree, and the comparison of the red fields and the "dimly lighted" white fields shows that when there is a loss of perception of red there is always some loss of perception for white objects in the dim light both centrally and peripherally. The losses in perception of red and dimly lighted white objects are therefore coincident.

In following out cases over some months the variations in visual conditions according to the faithfulness with which the patient followed out the treatment indicated—abstinence from tobacco and the administration of strychnine—has been most interestingly shown. Four cases have been followed to the point of recovery; good visual acuity has been regained, contracted fields of vision for dimly lighted white objects have expanded to a close coincidence with those taken in full light, and scotomata for colours and dimly lighted white objects have been recovered from. On the other hand, lapses in the abstinence from tobacco and alcohol—and particularly as in one case where a drunken debauch intervened—were followed by loss both in visual acuity and extent of field in a marked degree.

It may be asked, what becomes of the statement made so often by patients suffering from the disorder that they see better at night than in the full daylight? a statement which, Fuchs[2] writes, was proved by him to be true in a few cases. The fields which I have taken give the answer to the difficulty. That the patients do not see more clearly on a change from full daylight to a dimly lighted room is certain, for the fields which I have taken in the dim light were contracted and showed scotomata which did not appear when taken in the full light. But several of the cases showed the characteristic signs of *fatigue* in a tendency to that helical curve which is so marked in hysterical amblyopia. Not infrequently an examination had to be interrupted and the patient allowed to rest, which rest the patient took by covering the eyes with the hand, before it could be satisfactorily concluded. It seems therefore possible that in a dim light of some duration there may be some partial relief from the fatigue produced by the constant stimulation of a bright light, so that a slight improvement in the visual acuity of the patient may result, and this irrespective of the freedom from the dazzling effect of bright light in their partially blind state.

There remains to be considered the bearing of the features shown by these fields on the views held as to the nature of tobacco amblyopia. The commonly accepted belief is that there is an axial and retro-bulbar neuritis, a limited affection of the papillary macular bundle seated in that portion of the nerve found within the optic foramen. In the discussion on retro-bulbar neuritis at the Manchester meeting of the British Medical Association in 1902[3] I ventured to express my doubts on this point in favour of the probability of the disorder being primarily one of the retina. These fields show that the amblyopia is not confined to the central region but that given a delicate enough test a loss of vision can be demonstrated for the periphery of the field and from the liability to symptoms of fatigue exhibited by these patients the defect may be conjectured to extend in some degree to the whole field of vision. In short, these subjective symptoms point very strongly to the correctness of Arlt's idea when he originally described the disorder as a *retinitis*—"retinitis nictaloptica."

An inquiry very naturally arises from these observations: Is the altered perception of an object in a diminution of the general illumination paralleled by a loss in the perception of objects whose luminosity is diminished whilst the general illumination remains unchanged? As I have shown, the peripheral field for a 20 millimetre white object in a healthy subject is the same whether taken in full daylight or in the dim light (one-tenth illumination), and I find that in *such subjects* the white fields in the full light are practically the same whether the object be 20 × 20, 10 × 10, or 5 × 5 millimetres; the reduction of the area of the white from 400 square millimetres to less than a tenth of this area does not diminish the perception of the white object. In the subjects of tobacco amblyopia this is not so; successive examinations of the peripheral field with 20, 10, or 5 millimetre objects show a smaller range of perception for the smaller objects as against the larger, the field for the smallest object being very similar to that for the 20 millimetre white object in the dim light.

Queen Anne-street, W.

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[2] Textbook, p. 440.

[3] Brit. Med. Jour., Nov. 1st, 1902, p. 1439.

CANCER FACTS AND CANCER FALLACIES:

A PLEA FOR THE MORE SCIENTIFIC STUDY AND TREATMENT OF MALIGNANT DISEASES.[1]

BY HERBERT SNOW, M D. LOND.,
SENIOR SURGEON TO THE CANCER HOSPITAL, BROMPTON.

UNDER this heading I would venture to call the attention of the section to the progressively increasing mortality from cancerous diseases in apparently all civilised communities; *and secondly, to point out more Socratico one or two of the* undeniable fallacies which seriously impede all present attempts at scientific investigation or practical amelioration. Of course, I can but touch the outermost fringe of this great subject.

In England and Wales the ratio of registered deaths from cancer to each million of persons living amounted in 1864 to 385; in 1874, to 461; in 1884, to 563; and in 1894, to 713. For the five years 1896–1900 it equalled 800·2 per 1,000,000. In 1901 "among males cancer was fatal at the crude rate of 691 per 1,000,000 at all ages and among females at the rate of 985 per 1,000,000."[2] In Ireland the cancer mortality in 1864 was 1498 in a population of 5,675,307. 20 years afterwards, with a decreased population of 4,962,693, is recorded an increased mortality of 1947. In 1902 the last published returns show 2861 deaths (females, 1575; males, 1286) to 4,432,274 inhabitants, or a ratio of 645 per 1,000,000. In Scotland the cancer deaths were 3503 (females, 2142; males, 1361) in June, 1900, out of a population numbering 4,436,958. This is at the rate of 800 per 1,000,000. In 1864, with 3,118,701 inhabitants, the cancer return was 1300; in 1884, with 4,962,693 people, it had increased to 2110. In New York State the 1,000,000 ratio was, in 1875, only 400; in 1885, 530; and in 1900, 670. In Connecticut it has risen from 520 in 1891 to 660 in 1900; in Massachusetts, from 610 to 710; in New Hampshire, from 560 to 710; and in Rhode Island, from 510 to 680.

Turning to European States, we find that in 1891 Austria recorded her ratio as 540; by 1900 it had increased to 700. In the same period Bavaria returns a rise from 890 to 990; Holland, from 790 to 930; Italy, from 430 to 520; Norway, from 610 to 920; and Prussia, from 450 to 610. Of the cities, Amsterdam returns for the same years, 1891–1900, a rise from 880 to 980; Boston, 690 to 810; Breslau, 860 to 1080; Brussels, 340 to 440; San Francisco, 600 to 1090; Stuttgart, 760 to 1270; Vienna, 1040 to 1210; and St. Petersburg, from 990 in 1891 to 1000 in 1899.[3]

Large as the above figures may seem there is considerable reason to believe that more accurate registration would augment them in no small measure.[4] Among ourselves a large number of deaths from cancer are certified as due to "gastritis," "enteritis," "intestinal obstruction," "stricture of pylorus," "dropsy," "internal tumour," and so forth.

Now the public—as voiced by the lay journals—credit us with complete ignorance of the causes of "cancer" and with utter impotence to eradicate it surgically or to ameliorate it medicinally. Is not the profession largely responsible for these absurdities? And could the influence of this great association be more beneficently utilised than in attempting to demolish them? What could be more fatally opposed to the interests of science than the common practice of grouping together a large number of diverse maladies under the single title "cancer"—no more definite and precise a term than "fever"? The point would be best appreciated by supposing someone to promulgate

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[1] *A paper read before the Surgical Section* of the British Medical Association at [illegible] 04.

[2] [illegible] port for 1901, p. lix.

[3] I am indeb[illegible] and continental statistics to the courtesy of Dr. E. F. Bashford.

[4] See Registrar-General's remarks at p. 73.

further extension of the lesions Gradually all the sloughs were removed by fomenting and a large raw area was left *extending from just below the right ear down to the right* breast As the area was so large skin grafting was resorted to but the grafts refused to hold and a subsequent trial gave no better results Boric acid ointment was then applied for a time while later red lotion on lint gave excellent results Convalescence was slow and protracted the part granulating very slowly indeed Her general condition became much better in hospital iron having been persevered in steadily and except for a slight rheumatic attack she improved daily Her temperature throughout was slightly above normal usually about 99° F Twice however abnormal temperatures were registered once 110° and again 105° but on both occasions when the nurse again took the temperature it was found to be normal The cicatrix several times broke down when nearly completely healed but eventually after nearly five months in hospital she was discharged with the *part quite healed* but with an exceedingly large disfiguring cicatrix or rather cicatrices on her neck and breast

Banff N B

A CASE OF BULLET WOUND OF THE BRAIN

IN WHICH THE BULLET LODGED ABOUT 12 CENTIMETRES FROM THE POINT OF ENTRANCE AND WAS EXTRACTED FROM A DEPTH OF 6 5 CENTIMETRES FROM THE SURFACE OF THE HEAD [1]

BY WILLIAM SHEEN M S LOND, F R C S ENG

SURGEON CARDIFF INFIRMARY CONSULTING SURGEON SEAMEN'S HOSPITAL CARDIFF SURGEON IMPERIAL YEOMANRY FIELD HOSPITAL SOUTH AFRICA 1900

With a Note on the X ray Methods in the Case by WILLIAM MARTIN *M A M B C M Glasg, Assistant Surgeon to and Medical Officer in charge of the Electrical Department Cardiff Infirmary*

A MAN aged 23 years a stoker was struck on the forehead by a revolver bullet while standing on the cab of his engine The bullet was fired from a garden near the railway line at a distance of from 25 to 30 yards The man fell but loss of consciousness was only momentary The wound was enlarged and probed without result He walked to a train and was taken a distance of about 20 miles to the Cardiff Infirmary and was admitted there at 6 30 P M on Nov 28th 1903 three and a half hours after the accident

Detailed examination immediately after admission showed an entire absence of symptoms There was no evidence of the position of the bullet Three hours later vomiting occurred In the morning he was semi conscious grunting moved his limbs when told to and said yes and no The reflexes were unaffected The pupils were equal and were of medium size and reacted Slight paralysis of the lower side of the face was present on the right side The temperature was 99 8° F and the pulse was slow and full The head was shaved A skiagraphic view showed indistinctly the position of the bullet Antero posterior and lateral x ray photographs were taken and these being developed the man was anæsthetised on Nov 29th at 3 P M In the intervening period his temperature had gradually risen and was now 102° The entrance wound was situated 2 5 centimetres *to the left of the middle line and 2 5 centimetres* above the orbital arch it had contused edges and had been enlarged by a crucial incision The bone and dura mater had been lacerated and brain substance oozed from the wound There were no fissures radiating from the wound in the bone A suitable toilet was made of the wound and it

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The subsequent progress was one of slow general improvement complicated by the incidence of paresis of the right arm and right side of the face with motor aphasia symptoms all of which gradually subsided The temperature reached normal on the fourth day after operation and *remained there Examination of the optic discs by Mr* F P S Cresswell on Dec 1st showed them to be healthy *and a blood count by Dr Cyril Lewis on Dec 2nd* gave 10 400 leucocytes per cubic millimetre There was loss of control of the excreta until Dec 3rd The paralysis of the face was limited to the lower part the associated movements being good Weakness of the right arm was noticeable on Dec 1st and aphasia on the 2nd The paretic symptoms became more marked during the next four days when slow improvement commenced T

mometer grip *nil* inabil

to move the elbow and

arm No sensory disturbances were noted at this time but later there was numbness in the little and ring fingers which after the second operation extended to the middle and index fingers The aphasic symptoms were of the ordinary motor type Whilst unable to speak to repeat or to name objects comprehension was perfect and he was always able to indicate the number of syllables in a word No disturbances of the special senses were present The stereognostic sense was good After passing through a state of mental confusion characterised by laughing and silliness he completely regained consciousness by Dec 7th The first *person he recognised was the man who shot him, he called* out this man's name and indicated a dislike to his presence On Dec 16th the dynamometer grip was right 40 left 60 and the facial paralysis was almost gone The aphasic symptoms disappeared more slowly but by the end of December only occasional hesitation or difficulty in getting out words remained together with confusion and stuttering when he embarked on a long sentence He remembered his accident and admission to the infirmary then there was a blank for three or four days when he remembered his mother sitting by his bedside

The only further points to be noted up to the date of the second operation were intermittent attacks of left parietal and frontal headache and on Dec 18th a bad attack of general headache with temporary increase in the aphasia and arm weakness this passed off On Jan 16th he got up and on the following day slight weakness of the right leg was noted together with a tendency to throw out the right foot when walking The right knee jerk was found slightly more marked than the left previous examinations had shown no difference

The second operation was performed on Feb 9th—i e, ten weeks after the injury The forehead wound was soundly healed Several skiagrams had been taken and a stereoscopic view was prepared showing the position of the bullet Chloroform was administered by Dr W G Williams Mr A Brownlee the resident medical officer assisted, and Mr Martin Dr I W Parry of Ferndale (who first saw the patient) and other gentlemen were present A flap was turned down behind the left ear and a one inch disc of bone was removed above and behind the meatus This bone opening was enlarged downwards and forwards, the dura mater was opened and search was commenced for the bullet by entering a probe 3 5 centimetres above the meatus and 2 5 centimetres behind the inter meatal line *and passing it in in the horizontal plane of the head* for a depth of 6 7 centimetres The bullet not being felt Hedley's telephone probe was passed in the same line and after feeling a moment a rather doubtful tap was heard The probe was withdrawn and a pair of ordinary dressing forceps was passed in and felt the bullet which bobbed about in an elusive way at the end of the forceps suggesting the possibility of its being in a cavity A first attempt to grasp and to remove it proved unsuccessful but on reintroducing the forceps it was seized and removed with a little adherent brain substance The length of forceps introduced measured 6 5 centimetres from the general skull surface *As there was considerable increase of intracranial* tension some of the brain substance had to be removed before the dura mater could be brought together The disc of bone was replaced and the wound was closed with drainage

The after progress was uneventful There was no paralysis or aphasia The tube was removed on the day following the operation and the stitches were removed on the eighth day when the wound was found to be healed completely Exactly three weeks from the operation the man got up There was still slight weakness of the right arm and leg The dynamometer grip was right 60, left 90 Dimness of vision was complained of particularly in the right eye On Feb 22nd Mr Cresswell reported: "? slight contraction of the field of vision outer side of right eye; in both eyes the optic discs are somewhat pale in the temporal half and arteries small; otherwise the fundi are normal and the media clear. Vision: R. E. $\frac{6}{24}$, J. 8; L. E. $\frac{6}{18}$, two letters, J. 8." On March 24th a further report stated: "Patient has mixed astigmatism. Vision: R. and L. E. $\frac{6}{12}$, J. 16. Corrected by glasses, $\frac{6}{6}$, J. 1. Pupils equal, semi-dilated. Right does not react so well to light as left. Fundi normal. Visual field: L. E., normal; R. E., ? some slight contraction in lower and outer part of field." The patient was supplied with suitable glasses. One other interesting point should be mentioned. When the hair commenced to grow after shaving it failed to grow in the right temporal region. The hair was slowly growing over this part when the patient left the hospital. He was discharged on March 25th, 1904, having been kept in for so long a time so as to be under observation.

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[1] A paper read before the Cardiff Division of the South Wales and Monmouth Branch of the British Medical Association

Such cases as the above are necessarily rare in civil practice, but they are also rare in military, particularly modern military, practice. My own South African experience,[2] coupled with such examination of the literature of the South African and other recent wars as I have been able to make, has not furnished a parallel case—i.e., I have not been able to find a case where the bullet has been removed from the depths of the brain entirely on the results of x-ray localisation. Mr. W. H. A. Jacobson's observations[3] are the most instructive and complete that I have been able to find; he gives details of one case (Braatz) where x-ray localising methods resulted in the successful removal of the bullet, but the depth of the bullet is not stated.

The various interesting points of the case are best considered *seriatim*, but before doing so I wish to express my great indebtedness to Mr. Martin (whose report follows) for his careful and accurate localising work which helped to bring the operation for extraction to a successful issue.

Why did not death immediately ensue?—In studying bullet wounds of the brain one is struck with the uniform fatality of the cases when the bullet has passed right through the head or when it has lodged deeply. Injuries of the fronto-parietal type, as Makins has pointed out,[4] are particularly fatal. This fatality is due to the high velocity of the modern small-arms bullet which, as it rushes into the brain, scatters waves of destruction in all directions; whereas a spent bullet or a bullet of initial low velocity simply pushes its way into the brain substance and the damage it does is largely limited to its track. An indication of the damage done to the cranium by a high-velocity bullet is seen in the fissures which radiate in the bone around the wound of entrance; such fissures were not present in my case. Similar destructive waves would be produced in the brain tissue beneath. The size and structure of the bullet are other factors in determining the amount of damage which need not be further dwelt on. The exact course taken by the bullet—in my case above the ventricles and basal ganglia—also, of course, helps to determine a favourable result or the reverse.

The initial delay of symptoms.—The gradual onset of symptoms some hours after injury must be attributed to a localised "œdema of the brain." There was no concussion—so common in injuries by high-velocity bullets—and the symptoms were not sufficiently immediate for hæmorrhage and not sufficiently delayed for inflammatory processes.

The leucocyte count.—This, together with the absence of optic neuritis, was valuable in negativing meningitis or commencing abscess, particularly in the presence of a raised temperature.

The bullet track.—A study of these cases shows that surgeons recognise a "bullet track" along which probes can be passed. In my case there was no bullet track. The brain tissue seemed to have closed up behind the bullet. Similarly in using instruments in the second operation it was noticed that one instrument did not leave a track for the next. Hence, the necessity for avoiding reintroduction of instruments (*vide infra*).

Probable course of the bullet and point of lodgment.—Knowing the localising points careful observations on a skull and brain of about the same size as the patient's enabled me approximately to determine these. At one time it appeared possible that the bullet had been arrested in its course by the tentorium cerebelli—a not unlikely thing to happen to a bullet travelling with low velocity—and had become imbedded in that membrane. This condition, which would have increased the difficulty of extraction, was negatived by later photographic methods. Entering, then, 2·5 centimetres above the left orbital arch and the same distance to the left of the middle line, the bullet passed backwards, downwards, and slightly inwards (the man probably had his head bent forwards when struck) for a distance of 12 centimetres, lodging at a depth of 6·5–7 centimetres in relation to a point 3·5 centimetres above the external auditory meatus and 2·5 centimetres behind the inter-meatal line—i.e., lodging about 1·5 centimetres from the middle line and 2·5 centimetres above the tentorium. The bullet traversed the left frontal lobe and the innermost fibres of the corona radiata, passing gradually backwards and inwards into the callosal convolution, in the hinder part of which it lodged, the corpus callosum being therefore probably uninjured.

Comparison of symptoms.—It is difficult to compare the symptoms exactly with the anatomical data as one does not know to what extent they were due to the primary passage of the bullet and to what to the secondary disturbances around the bullet path. There was interference with the functions of Broca's area, probably due mainly to subcortical damage, as there was not the slightest impairment of the understanding of words and the man could always correctly indicate the number of syllables in a word. The motor areas for the face and arm were interfered with less and that for the leg hardly at all. There was hardly any disturbance of sensation, indicating the little that the callosal convolution had to do with that function.

Eye symptoms.—The disturbance of vision after the second operation was somewhat more than could be accounted for by the astigmatism present and, as will be seen by a comparison of Mr. Cresswell's two reports, there was some improvement in the course of a month. It is quite possible that at the second operation there was some temporary injury to the connexions of the left half vision centre.

Localised baldness.—This occurred on the side opposite to the injury. Was it due to some trophic disturbance in the skin or to the action of the x rays, this being the side that was exposed to the rays? The exposures made were short, on no occasion exceeding two minutes, and there were never more than two photographs taken on one occasion. Fluorescent screen observations were only made once for a short time and that was on the day of admission.

Was the operation for extraction of the bullet justifiable?—The man was nearly free from symptoms and apparently on the road to complete recovery. There were, however, certain symptoms—viz., intermittent headache, pain on moving the head, and at least one definite, severe attack of headache with temporary remission of symptoms. Then one realises that the heavy bullet may change its position; it being felt as if in a cavity at the second operation supports this possibility. Cases where the foreign body is left often do not do well; in addition to headache there may supervene mental disturbances, fits, cerebral abscess or softening, various paretic symptoms, &c. The disturbing influence on the patient of the fact that a foreign body is in his brain has also to be taken into account; in this case the man was a factor in determining operation, for he was very desirous to have the bullet removed. Finally, in approving the justifiability of removal one might point out that an operation conducted aseptically and carefully, even if the bullet were not discovered, would not be likely to do any harm, and if there were, an increase of intracranial tension, as in this case, would do good quite apart from the bullet extraction.

Value of the x rays.—The chief point in the case is the illustration of the value of localisation by the x rays. It would have been impossible to localise the bullet to any serviceable degree without such aid. Unfortunately, however, one cannot say that the extraction of a bullet is always assured after accurate localisation. The probability lessens the greater the depth of the bullet from the surface, for the deeper the probe or other instrument has to go the more likely is its point to deviate from the exact path.

Instruments required in these cases.—The telephone probe I used was wrongly constructed so must be dismissed as a factor in this case. Practically the extracting forceps found the bullet. The telephone probe, however, is of undoubted utility but in order to obviate as far as possible the reintroduction of instruments a "bullet-probe forceps" is desirable, an instrument which can be attached to the telephone receiver and which both detects and extracts the bullet. Further, such an instrument should be graduated so that it can be at once noted when it has entered the required depth. On these lines I am having certain forceps constructed with suitable telephonic attachments and I purpose to publish a detailed account of them at a later date.

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[2] [illegible] ital Reports, vol. iii. Surgical Report of the [illegible] Company, by Charles Stonham. London: A. L. [illegible]

[3] Jacobson and Steward: The Operations of Surgery, vol. i., fourth edition, 1902, p. 260; "Operative Interference in the Case of Foreign Bodies in the Brain."

[4] Makins: Surgical Experiences in South Africa.

The patient returned to work on July 4th last, and has, so far as I know, continued at work. He discarded his glasses, saying that he could see better without them, and is in all respects well.

Note by MR. MARTIN.—In all cases before the removal of foreign bodies is attempted accurate localisation is advisable but when the foreign body is inside the cranium such localisation is absolutely necessary. In such cases as the above, without the aid of the x rays surgery is helpless. In Mr. Sheen's case the ordinary routine was gone through. Shortly after admission a screen examination was made to get some idea of the locality of the foreign body and skiagrams were taken. When the question of removing the bullet was brought forward skiagrams were taken laterally and antero-posteriorly and localisation was performed by the double impression on the single plate and the Mackenzie Davidson cross-thread localiser. By this means it was found that the depth of the bullet from the plate was 6·9 centimetres. About five centimetres were allowed for scalp, &c., intervening between the plate and the external surface so that it was calculated that the centre of the bullet, approached on the horizontal plane of the head from a point 3·5 centimetres above the left meatus and 2·5 centimetres behind the intermeatal line, would be found at a depth of 6·4 centimetres. This distance was checked by the antero-posterior view which gave the centre of the bullet between 6·4 and 6·5 centimetres in a line from outside the bony cranium.

The night before the operation for removal of the bullet, in order to make certain that no serious alteration in its position had taken place since the localisation, stereoscopic impressions were made and from the wet plates prints being obtained by artificial light the surgeon was enabled to see the bullet *in situ* before beginning the operation. A stereoscopic view is of great help, giving in the matter of relations and direction confirmation of other methods of localisation. Stereoscopic views of foreign bodies lying deep in the cranial cavity do not, however, give a very clear idea of the exact depth owing to the absence of intervening landmarks *in the same way that distances at sea are so difficult to* estimate. The uniformity of the surfaces of the parietal [illegible] was [illegible] superimposed upon the other in crimson, to be viewed through green and crimson glasses This, I understand (February, 1904), is the first time that this method has been applied to x-ray work and I venture to suggest that there may be a future for the method as a means of illustrating stereoscopically x-ray photographs in medical journals.

Cardiff.

CONGENITAL WORD-BLINDNESS.[1]

BY SYDNEY STEPHENSON, M.B., C.M., F.R.C.S. EDIN.,
OPHTHALMIC SURGEON TO THE EVELINA HOSPITAL, ETC.

THAT some children are much slower than others in learning to read must be an observation as old as the art of reading itself. It is, however, only within the last few years that such tardiness in otherwise bright children has been recognised by a special name and studied with some approach to scientific accuracy. The first writer to describe the condition was Dr. W. Pringle Morgan.[2] His patient was a lad, 14 years old, who, although intelligent in every other way, experienced the utmost difficulty in learning how to read. The defect was so marked that despite seven years' constant application he was able to spell out only monosyllabic words. Figures, curiously enough, he could read fluently and simple arithmetical sums were done fairly well. A couple of years after the publication of Dr. Morgan's modest communication Dr. H. C. Bastian[3] described a similar case in a young man, aged 18 years. This patient was so extremely slow in learning to read that his tutor almost despaired of ever being able to teach him. Dr. James Hinshelwood[4] of Glasgow next took up the subject, analysed the cases previously reported, and added two new examples to the growing list. To Dr. Hinshelwood undoubtedly belongs the credit of having been the first to describe the condition scientifically, to assign it to a defect in the vis [illegible] and letters, and to name it " [illegible] It is highly probable that but [illegible] the two previous communications would have failed to attract the attention they have since received. Mr. Nettleship[5] next described five cases and in doing so spoke of having been familiar with the condition for many years, thinking and speaking of it as a congenital want of power to acquire knowledge by printed signs. In the year 1902 Dr. Hinshelwood[6] reported two further cases and took the opportunity of elaborating several of his previous arguments with regard to the essential nature and characteristic symptoms of the condition. The other reported cases up to the date of writing include one by Lechner[7] and two by Wernicke.[8]

So far, then, 14 cases of congenital word-blindness have been reported by six authors. To conclude, nevertheless, that this congenital defect is rare on account of the small number of cases reported in literature would be to commit a logical fallacy. Almost everybody who has written on the subject, notably Dr. Hinshelwood, has commented upon the fact that cases are not so rare as the scarcity of records might lead one to infer. Slight cases are almost certain to be overlooked in the hospital out-patient room where surgeons are busily occupied and parents seldom capable of giving a clear account of their children's ailments. On the other hand, congenital word-blindness, especially when of slight degree, is much more likely to be recognised in the consulting-room and as a matter of fact most of the cases appear to have been met with in that way. At the same time, there is no present ground for the belief that the condition is commoner in children of the poorer classes. One point should be mentioned—namely, that 85 per cent. of the cases have been reported by ophthalmic surgeons, an observation that goes to show that patients, in the first instance at any rate, usually seek special rather than general medical advice.

The subject of word-blindness is interesting both from the medical and from the educational standpoint, a fact that leads me to place on record two instances—one slight and the other severe—that have fallen under my notice. The facts are as follows.

CASE 1.—The patient, a boy, aged nine years, was seen on Dec. 10th, 1898. Although a painstaking boy he had experienced unusual difficulty in learning to spell and to read. Arithmetic also caused him difficulty. He complained that his eyes got sore after doing his lessons. He had considerable powers of observation and of insight. For example, he could carry in his mind the details of a machine or of a building and could reproduce them on paper. He reasoned well. In disposition he was considerate and sympathetic. His father, an exceptionally cultured man, believed that his son's failure to read was due not to a mental but to a developmental defect. The boy was *of a nervous temperament* but was tolerably well-grown for his age and apparently in good health. His relative visual acuity was almost normal (V. = $\frac{6}{6 \text{iii.}}$ and No. 1 Jaeger), but he deciphered the letters on the Snellen distant type in a curiously hesitating way, a difficulty that extended both to the large and small letters. The small types of Jaeger were read slowly and with many mistakes, but what struck me as peculiar was that the larger type on the same test was read with just as must difficulty. Under a cycloplegic: R. V. = $\frac{6}{12} + 1{\cdot}50 = \frac{6}{6}$; L. V. = $\frac{6}{12}$ ii. $+ 1{\cdot}50 = \frac{6}{6}$. The fundi were normal; the fields of vision for white were full; the colour sense was not noted. Spectacles (+1·0 *D.* spherical) were prescribed for reading and the father was advised to educate the lad privately. When I saw the patient again, some six months later, I found that he had made considerable progress with his reading. The boy died from influenzal peritonitis on Jan. 15th, 1904, that is to say, some five years after he first came under my notice. According to information kindly furnished by his father distinct progress had been made in the last year of life. His spelling had improved, especially of Latin words, a language that is more phonetic than English. The improvement had extended to reading and to arithmetic. He was learning to draw from the solid and was doing it well. "I am exceedingly glad," the father wrote, "that, following your advice, I did not send him to school. Now that the little fellow is gone it would have been a life-long regret to me if I had embittered his last year of life by placing him where he could not have learned without pain."

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[1] [illegible] the Study of [illegible]

[3] [illegible] London, 1898.

[8] Wernic[illegible] [illegible]ptember, 1903.

CASE 2.—The patient, a boy, aged ten years, was seen by me on Jan. 15th, 1903. This excitable lad had been affected for about five years with spasmodic movements of the face, eyelids, mouth, and neck, especially marked when under the influence of emotion, with a so-called "habit spasm," in fact. He was brought because he had experienced great difficulty in learning to read and was believed on that account to be "short-sighted." He had never suffered from scarlet fever, rheumatism, or "growing pains." His heart sounds were normal and he was not subject to sore throats, such as many rheumatic children are affected with. He is deaf (= watch close to ear) on the right side, owing to long-standing otorrhœa. The family history was as follows. His great-grandmother died at the age of 75 years from a third stroke and she was paralysed down one side for many years before her death. His mother, maternal grandmother, and younger sister had all been affected with rheumatism, the last-named after an attack of scarlet fever. His eldest sister, now 13 years of age, read well when she was eight years old. His father and mother both come from large families, but no reading defect amongst the members had ever been heard of. There were no insanity or hysteria or "fits" and no miscarriages or stillbirths. Upon examining the lad sight was found to be R. $= \frac{6}{36}$; L. $= \frac{6}{24}$. Atropine was prescribed and a few days later refraction was estimated with the following results: R.V. $= \frac{6}{36} \; \frac{+1 \cdot 50}{+3 \cdot 5090^\circ} = \frac{6}{12}$; L.V. $= \frac{6}{36} + 4 \cdot 090^\circ = \frac{6}{12}$. The fundi were normal. Glasses were prescribed for constant wear. About a year later (Jan. 13th, 1904) I obtained a much more complete account of the patient's tastes, peculiarities, and defects. He was described as being "as bright as a lark and as sharp as a needle." He pondered over books but did not enjoy them owing to the difficulty of reading them. Handwriting was read as badly as printed matter and figures were read as imperfectly as either. Dictation was badly done. Although unable to express himself in writing yet he could copy sentences from a printed book correctly. He was almost unable to learn by heart from a printed page but he could memorise quickly and retain tenaciously anything told or read to him. Thus, he learned by rote 14 verses, each containing four lines, in two days and repeated them to me without hesitation or mistake. His memory was excellent. At such games as cricket, football, draughts, and dominoes he could play well. The lad, before he came under my notice, was educated at a boarding-school at the seaside and an inspection of his term reports brought to light certain interesting points. From the earlier reports it seemed evident that his teachers had no idea of the lad's peculiarity, for they characterised him as "inclined to be idle" (Christmas, 1901). In summer, 1902, we find that "he has made especial progress in arithmetic," although it is to be noted that he obtained only 20 per cent. of the total available marks in that subject. A similar comment with regard to arithmetic is made in the report for the term ended Dec. 17th, 1903. In short, the boy's strong subjects were divinity, history, and geography, in all of which he learned the work presumably by the exercise of a very active auditory memory.

It cannot be doubted, then, that there exists a congenital condition not necessarily associated with any other defect (mental or physical) where the learning of letters or of words from printed or written characters is difficult or, it may be, even impossible. This congenital letter- or word-blindness may be due, as Dr. Hinshelwood and Dr. Lechner surmise, to a congenital defect in the visual memory centre for words and letters. The fact is probably not without significance that of the total number of cases 13—that is, 82·25 per cent.—have been met with in males. The ages of the patients (given in 15 instances) ranged from seven to 23 years and averaged 13 years. In other words, they usually fell under notice at an age when the nature of their peculiarity would be forced upon the attention of parents and teachers. A neuropathic family history was forthcoming once only—viz., in one of Wernicke's cases—where the father, an intemperate man, died insane and the patient's elder brother was weak-minded. It may be noted in passing that another brother could play several games of chess simultaneously and also without seeing the chess-board. The two brothers of one of Mr. Nettleship's patients were stammerers. Some of the sufferers from alexia have evidently been of a nervous temperament, as witness one of Wernicke's patients, a female, 19 years of age, said to be hysterical; Lechner's case, a boy, 13 years of age, said to be "very nervous"; and in the two cases described in the present communication. The previous illnesses of the patients offer nothing calling for particular remark. As a rule they enjoyed good health.

Vision was recorded in ten of the cases and was normal in all except two. Refraction, specifically mentioned ten times, was emmetropic once and hypermetropic with or without astigmatism in the remaining nine cases. The fundus oculi was examined in six patients with negative results. The fields of vision and the colour sense were normal in the two cases in which they were investigated.

General intelligence was good in 13 of the 16 cases and may well have been so in the other three cases, but no definite note was made with regard to the point. The ability to read figures existed in seven of the cases, was not noted in seven cases, and was poor in my own cases. In this connexion I may just say that several years ago I saw a lad, aged ten years, who experienced extraordinary difficulty in reading figures without any corresponding difficulty in regard to letters and words. There was a trifling amount of hypermetropia (0·75 D.) but his eyes were otherwise normal. Unfortunately, I saw the patient once only and have failed to trace him since. As to music, mentioned twice only in the series, it was stated that patients experienced no trouble in that respect. The auditory memory appears to have been developed highly in most of the patients. Thus, one of Wernicke's patients could speak two languages correctly; one of Hinshelwood's patients concealed his difficulty in reading for a time by learning his primer off by heart; Lechner's patient is stated to have known the contents of his school books by rote; and my second patient could memorise well and quickly anything told or read to him.

What improvement can be expected in these cases? It will naturally vary according to the original severity of the case and the educational means adopted. It may be considerable. It may, furthermore, take place comparatively quickly, as shown by one of Hinshelwood's cases, where a boy who had not been able to read after upwards of four years at school made very considerable progress in recognising letters by dint of constant practice during seven weeks. The improvement in these cases is usually described as "slow but satisfactory." Perhaps the most striking case is one mentioned by Nettleship, where a boy who suffered from a marked degree of alexia eventually learned to read easily and 19 years after he was first examined had become a lawyer. It may be concluded therefore that with special training even severe cases of congenital word-blindness are capable of considerable improvement. It is clear, moreover, that the earlier such training is begun the better are the results likely to be. Hence the importance of recognising the defect at as early an age as possible.

The diagnosis offers few difficulties if once the fact be firmly grasped that there is such a thing as congenital inability to read. At least, difficulty would be likely to arise only when the word-blindness co-existed, as in my second case, with a considerable error of refraction. Even in those circumstances the history should guard one against error, while the fact that the patient experienced exactly the same difficulty in reading large as he did small print would strongly suggest the presence of this curious congenital defect. It is interesting to add that more than one of the case-histories comment upon the fact that the patient never read for pleasure. In view of the particular attention now being paid to degeneracy amongst our poorer school children it is pretty safe to predict that congenital alexia will be found to be commoner than hitherto suspected, even by the medical profession.

Welbeck-street, W.

EPITHELIOMA OF THE TONGUE IN WOMEN,

WITH NOTES OF TEN CASES.

By CHARLES R. KEYSER, F.R.C.S. ENG.,
SURGICAL REGISTRAR TO THE CANCER HOSPITAL; LATE SURGICAL REGISTRAR TO ST. GEORGE'S HOSPITAL.

COMPARATIVELY recently Mr. R. Clement Lucas[1] stated that in all his professional experience he had only once removed a tongue from a woman for epithelioma. As I have lately come across a few instances of this disease I have looked up the records of St. George's Hospital and the Cancer Hospital and have been able to find ten hitherto unpublished cases. There can be no doubt that epithelioma of the tongue in women is decidedly uncommon, but the frequency with which it occurs varies apparently according to the sources from which the cases are derived. Thus Butlin and Spencer[2] state that the disease is found in women in 15 per cent. of all cases of epithelioma of the tongue. This agrees almost exactly with the figures given by A. E. Barker,[3] who found that out of 293 cases of cancer of the tongue, collected from seven different clinics, both at home and abroad, there were 46 females, or 15·6 per cent. The same author, however, mentions that Berg noted 11 instances out of 21 cases at the Serafimer Hospital, Stockholm. On the other hand, from the Hospital Reports of four London hospitals I have collected 593 cases; of these 48 were in women. This works out at 1 in 12·3, or almost exactly 8·09 per cent. During the last 12 years at St. George's Hospital there have been 32 cases of epithelioma of the tongue subjected to operation; six of these were women or 18·8 per cent. Stanley Boyd and W. H. Unwin[4] collected 34 cases from private and hospital practice from 1891 to 1902 both inclusive; only three of these were in women. A. D. Fripp and R. H. J. Swan[5] found that epithelioma of the tongue was seven times more common in men than in women, whereas sarcoma was only twice as common and usually appeared between the ages of 15 and 30 years. Butlin and Spencer[6] also give the following list as showing how the percentage frequently varies according to different authorities: Jessett, 400 cases, 15 per cent.; Whitehead, 104 cases, 15 per cent.; Gurlt, 14·6 per cent.; Lardau, 16 per cent.; Czerny, 26 cases between 1878 and 1888, all males; Kocher, 69 cases, three women; Krönlein, 40 cases, two women; Wölfler, 3·4 per cent.; Weber, 12·2 per cent.; Sigels, 29·5 per cent.; Clarke, 28 per cent.; Paget, 36 per cent.; Bruns, 33 per cent.; and Hayn, 43 per cent.

Age.—This does not seem to differ to any appreciable extent in the two sexes. In men the disease is uncommon before 40 years and occurs with great frequency between the ages of 50 and 60 years. In 21 cases of cancer of the tongue in women which I have collected from various sources the average age was 54·7 years. J. Hutchinson, jun.,[7] however, refers to a case where a girl, aged 19 years, was afflicted with the disease; the growth was removed and recurred. It was again removed and two years later she was free from recurrence. Butlin saw a case of a woman, aged 24 years; Spencer one at the age of 22 years; and Harrison, quoted by the two former authors, saw one in a girl, aged 20 years, who died in less than six months.

Causation.—As in men, the new growth is almost invariably preceded by prolonged local irritation the result of either rough, carious teeth, a badly-fitting or broken tooth-plate, or syphilis of the tongue. The so-called pre-cancerous condition or leukoplakia is commonly [illegible] tongue, as has been stated by some authors. Excessive smoking has also been adduced as a common predisposing cause, but this, again, does not appear to be at all common. Thus Barker[8] states that in Finisterre, where all the women smoke short pipes, Hertaux collected 100 cases of cancer of the lip and tongue; not a single case occurred in women. In Wales, also, where the women commonly smoke short clay pipes, the disease is not often observed. In only one case out of those which I have collected was there a history of smoking mentioned. In this connexion it is interesting to note the following facts issued in a special cancer supplement by the Registrar-General of Ireland for the year 1901. The total number of deaths from cancer in England, Scotland, and Wales has been steadily increasing from the year 1864 up to 1900. The figures now reach 8·3 for England and Wales and *8·0 for Scotland per 10,000 living inhabitants. In Ireland,* although the same steady increase is seen, the death-rate has always been about 2 degrees lower and is now 6·1 per 10,000. The death-rate from cancer of the tongue in England and Wales for the years 1897 to 1901 inclusive is 11·6 per cent. Excluding the year 1901, which includes *all* forms of malignant disease of the tongue, the death-rate is 11·3 per cent. However, in Ireland, although the total number of cases of cancer is less than in England, yet the death-rate from cancer of the tongue for the years 1898 to 1901 inclusive is 13·3 per cent. or 2 per cent. higher. Whether this is due to the fact that many women in Ireland smoke I should not like to say, as there are many other factors which may be concerned. In neither the appearance, situation, course, diagnosis, prognosis, nor treatment does the disease in women appear to differ from that in men. The Museum of the Royal College of Surgeons of England contains three specimens of cancer of the tongue occurring in women (Nos. 2271A, 2273F, and 2273L), but neither the specimens nor their histories show any extraordinary features. The notes of my cases are as follows.

CASE 1.—The patient was admitted into the Cancer Hospital in August, 1886, for epithelioma involving the left half of the tongue; it was freely removed. The patient was last seen on April 6th, 1904, and was in very good health and showed no sign of recurrence.

CASE 2.—A woman, aged 68 years, was admitted into St. George's Hospital on April 6th, 1892, under the care of Sir (then Mr.) William H. Bennett. The history was that the tongue had been sore and painful for six months. There was no history of syphilis. The patient was losing flesh. There was a hard mass slightly raised above the surface on the left edge and tip of the tongue; some ulceration was present. The floor of the mouth was not involved; no glands were felt. The anterior half of the tongue was removed with scissors the next day; recovery was uneventful and the patient was discharged on April 23rd.

CASE 3.—A woman, aged 60 years, was admitted to St. George's Hospital on May 10th, 1893, under the care of Mr. T. P. Pick. For five weeks she had had pain in the left side of the jaw and side of the head and had noticed a little white spot on the tongue on the left side. There was a deep ulcer with raised and intensely hard edges on the left side of the tongue and the floor of the mouth was implicated. On May 20th the left half of the tongue was removed by Whitehead's method and on July 3rd the whole of the growth in the floor of the mouth was excised. The patient was discharged on July 12th.

CASE 4.—A woman, aged 23 years, was admitted into St. George's Hospital on Jan. 5th, 1894, under the care of Mr. J. W. Haward. Six weeks previously she noticed slight soreness and a lump on the right margin of the tongue. She had been wearing a tooth plate in the upper jaw for two years. There was no sign or history of syphilis. On examination there was an ulcer far back on the right side of the tongue with raised and irregular surface, whitish in colour, and very hard. No enlarged glands were felt. On Jan. 19th a nodule of the size of a split pea was noticed on the dorsum of the tongue near the ulcer. On the 27th the tongue was split down the middle line and the right half was removed by means of an écraseur. The growth was examined microscopically by Dr. H. D. Rolleston and was found to be a squamous-celled epithelioma. The growth recurred in the tonsil and glands of the neck and the patient died on Dec. 4th.

CASE 5.—A woman, aged 48 years, was admitted into St. George's Hospital on Jan. 18th, 1898, under the care of Mr. Pick. For eight months an ulcer on the left side of the tongue had been noticed (? due to a decayed tooth). The ulcer was not increasing in size and the patient was not losing flesh. On the left side of the tongue a large excavated ulcer with everted edges was seen; there was induration around and the ulcer was irregular in shape. The tongue was freely moveable and there was no pain. A jagged, carious tooth was found exactly opposite the deepest part of the ulcer. No enlarged glands were felt. On Feb. 3rd a small portion was removed and examined microscopically by Dr. Rolleston who pronounced it to be a squamous-celled epithelioma. On the 10th the left half of the tongue was removed by Whitehead's method. The patient made an uneventful recovery and was discharged on the 28th.

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[1] THE LANCET, April 2nd, 1904, p. 929.
[2] Diseases of the Tongue, 1900.
[3] Holmes's System of Surgery, 1883.
[4] The Practitioner, 1903.
[5] Ibid.
[6] Loc. cit.
[7] The Practitioner, 1903.
[8] Loc. cit.

CASE 6.—A woman, aged 69 years, was admitted into St. George's Hospital on July 4th, 1900, under the care of Mr. Haward. For six months she had had much pain and had noticed a sore on the left side of the tongue which was rapidly increasing in size. She had had syphilis 25 years ago. A large ulcer with raised edges and an indurated base was found occupying the whole of the left side of the tongue from the tip to the anterior pillar of the fauces. It also extended beyond the middle line and involved the floor of the mouth, so that the patient was absolutely unable to protrude the tongue. She was losing weight and an enlarged gland was felt in the submaxillary region. On July 16th the growth was removed by means of an écraseur. Histologically the growth was a squamous-celled epithelioma but in addition showed evidences of syphilis. The patient died on the 27th.

CASE 7.—A woman, aged 72 years, was admitted into the Cancer Hospital on April 1st, 1903, under the care of Mr. F. B. Jessett. One year ago she noticed a small round ulcer on the dorsum of the tongue which caused pain in the ear. The ulcer gradually increased in size and "caused the saliva to dribble away." One sister died from cancer of the stomach. On examination the whole tongue was occupied by a cancerous growth which extended to the floor of the mouth. The tongue was quite fixed and there was an enlarged gland to be felt in the right submaxillary region. On the left side a gland of the size of a pea and freely moveable was present over a portion of the growth which extended down the left side of the larynx as far as the level of the cricoid cartilage. The patient died on July 7th.

CASE 8.—A woman, aged 52 years, was admitted into St. George's Hospital in February, 1903, under the care of Mr. A. M. Sheild. A sore place was first noticed on the left margin of the tongue in April, 1902. In July this became hard and a growth of the size of a pea became evident. No pain was suffered and the general health was good. At the posterior part of the left margin of the tongue there was a small rounded ulcer about one-third of an inch in diameter, with slightly thickened edges. The base was clean but somewhat indurated. The rest of the tongue was quite healthy and no enlarged glands were felt. On March 2nd an incision was made in the left submaxillary region and the submaxillary gland was removed; the tongue was then pulled down and the ulcer and the portion of the tongue around were excised. The patient made an uneventful recovery and left the hospital on the 23rd. The growth was examined by Dr. Rolleston who pronounced it to be an epithelioma. The patient was last seen in May, 1904, and was well and free from recurrence.

CASE 9.—A woman, aged 48 years, was admitted into the Cancer Hospital on August 18th, 1903, under the care of Mr. W. E. Miles. For three weeks she had noticed a sore place on the tongue, but for 14 years she had had "minute ulcers all over the tongue." 12 years ago "a tooth rubbed against the tongue" on the left side far back, but the tooth was removed. For 12 years also she had noticed white patches on the tongue. The patient had had two miscarriages but there was no other history of syphilis. On examination, far back on the left margin of the tongue was a warty ulcer surrounded by a small amount of induration. The dorsum was covered with leukoplakia. On the 19th a snip of the growth was removed for microscopical examination. The report was "rapidly growing epithelioma." The patient at first refused to have the tongue removed but ultimately accepted and the left half and the submaxillary glands were excised. On Nov. 14th there was no sign of recurrence.

CASE 10.—A woman, aged 42 years, was admitted into the Cancer Hospital on April 11th, 1904, under the care of Dr. F. A. Purcell. For three years she had noticed a growth on the tongue which had given her no trouble except for some slight pain lately. She thought it was caused by her artificial teeth. No history of syphilis was obtained. On the dorsum of the tongue, half an inch from the tip and extending from just internal to the right edge for three-quarters of an inch across the dorsum, was an oval ulcer about one and a quarter inches long; the edges were somewhat raised and the base was irregular and sloughy. There was very slight induration around and the edges were not hard or craggy. The tongue was freely moveable, the floor of the mouth being unaffected; there were no enlarged glands to be felt. On the 13th the right anterior half of the tongue was removed and an uneventful recovery followed.

In conclusion, I am much indebted to those surgeons who have kindly allowed me to publish their cases.

Wimpole-street, W.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

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A RARE FORM OF INTESTINAL STRANGULATION.

BY R. H. STEEN, M.D. LOND.,
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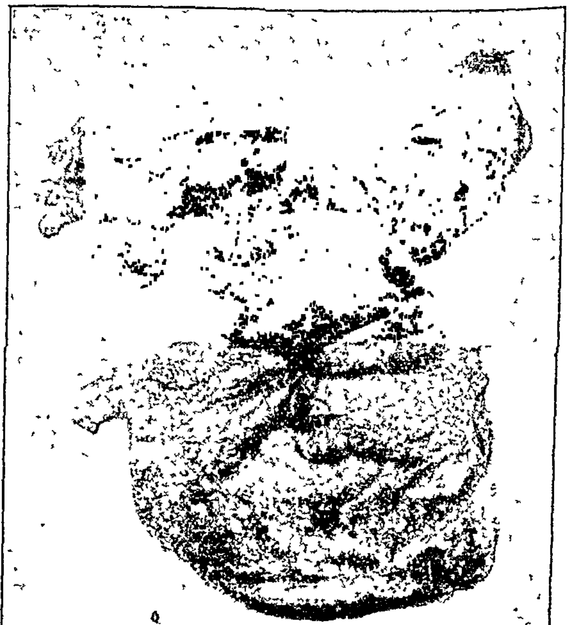
THE patient, a married woman, aged 49 years, was admitted into the West Sussex County Asylum on June 25th, 1901, suffering from chronic mania. She was quiet as a rule and had fixed delusions. Physically she was of moderate health and had slight mitral regurgitation. On Jan. 13th, 1904, she was seized with an attack of influenza, then epidemic in the institution. The symptoms were chiefly of the gastric type, with vomiting, slight pyrexia, muscular pains, and headache. She was better on the 16th and took her food well. On the 17th there were slight abdominal pain and distension which increased during the day. She was able to retain the greater portion of her food though slightly sick in the evening. On the 18th the tympanites became greater and she vomited all food. The vomit was not fæcal in character. She died on the afternoon of the 19th.

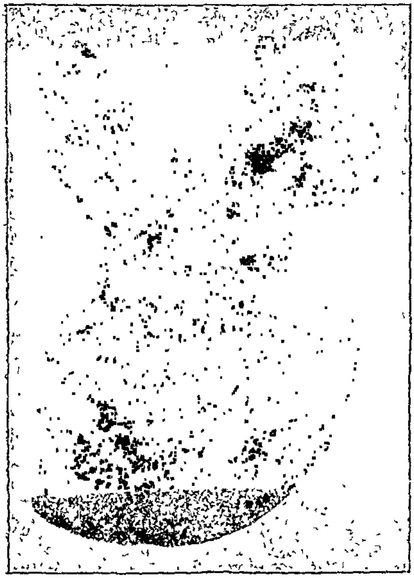
At the post-mortem examination the stomach and small intestine were found to be distended by gas. In the right iliac fossa the following condition was found. A volvulus had been formed by the terminal portion of the small intestine and through this the cæcum with the vermiform appendix had passed in the form of a loop. An internal hernia of the

FIG. 1.



Anterior view, showing the loop of the cæcum with constriction formed by a knot composed of small intestine.

FIG. 2.



Posterior view of the same.

large intestine had thus been produced, the constricting portion being the small intestine. The digestive tube had thrown itself into a slip-knot and it is difficult to imagine how this extraordinary state of affairs could have been produced. The attachments of the cæcum were probably *loose in character, which may have accounted for two* previous attacks of abdominal pain and tympanites which she had had in 1901, but the knot described must have been of recent formation, as no signs of plastic peritonitis were evident.

Chichester.

THE TREATMENT OF TETANUS BY INTRAVENOUS SALINE INFUSIONS.

BY VINCENT S. HODSON, M.B., B.CH. OXON.,
LATE RESIDENT MEDICAL OFFICER AT THE KASR-EL-AINI HOSPITAL, CAIRO.

IT seems to me worth while recording some fairly successful cases of tetanus treated by the above method inasmuch as the ordinary methods—viz., antitoxin, chloral, and bromide—are far from satisfactory, and though my cases are only three in number yet the immediate result was so striking that I feel encouraged to send them for publication.

CASE 1.—The patient was an Egyptian fellah who had had masseter spasm for 12 days before admission to the Kasr-el-Aini Hospital, Cairo. He was treated vigorously with antitoxin for the first two days in hospital, but as his condition seemed to me to get worse I on purely empirical grounds bled him 15 ounces and infused two kilogrammes of normal saline solution containing 75 grammes of brandy under complete surgical anæsthesia. Before his recovery from anæsthesia I gave him a dose of antitoxin and injected half a grain of morphine subcutaneously. After very profuse sweating he slept quietly and when I saw him next day had only very slight spasm of the masseters, which disappeared in a few days.

CASE 2.—This was a case of acute tetanus following on a tramway accident in which the patient lost both legs in the neighbourhood of the knees. About a week after admission to hospital tetanic spasms came on and when these had lasted five days and the patient's condition was very serious I heard of the case and with the permission of Mr. F. C. Madden, to whom I am indebted for this case, I infused him, bled him, and injected serum and morphine as in Case 1. This was followed by sleep for eight hours and complete cessation of spasm until about 4 A.M. next morning, that is, 16 hours in all. Spasm, however, returned with great rapidity and so I infused him again with the same result, but death ensued 24 hours later. This case was rather a severe test, as the man was quite young and very poorly nourished and was recovering from a very severe accident. The origin in this case was thought to be in a stitch which suppurated for a few days and then healed under treatment.

CASE 3.—This case was very similar to the first one and, as in that case, there was no history of wound. This absence of history is not to be wondered at as the fellaheen, for the most part, do not know their own ages and have practically no powers of memory or observation. Seven days of increasing spasm was the history obtained and shortly after admission to hospital I infused him with two kilogrammes of saline solution and 75 grammes of brandy and gave him the same injections as in the other cases. With the exception of *very slight masseter spasm next day there was no return of* symptoms and the patient was discharged after a short stay in hospital quite well.

Though not claiming that this treatment is a certain cure, the record of the above cases shows that it undoubtedly exercises a profound influence on the condition of spasm, and if added to the treatment of tetanus recommended in THE LANCET of August 6th, 1904, p. 386, will, I hope, help to reduce the present very heavy mortality that is quoted by the authorities.

Hony Bimbashi.

A Mirror
OF
HOSPITAL PRACTICE,
BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv., Proœmium.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL.

A CASE OF TRAUMATIC TETANUS WHICH RECOVERED UNDER TREATMENT BY HYPODERMIC INJECTIONS OF CURARE.

(Under the care of Mr. W. J. SYMES.)

FOR the notes of the case we are indebted to Dr. J. H. Connolly, house surgeon, and Dr. W. B. Cullen, assistant house surgeon.

On June 12th, 1904, a youth, aged 16 years, was admitted to the Chesterfield and North Derbyshire Hospital, with the history of having had his right leg crushed by the wheel of a wagon while at work in a coal-pit on June 3rd, causing a superficial ragged wound, about two by one and a half inches, in the popliteal space He was taken home and seen the same evening by Mr. J. A. Magee of Clowne, near Chesterfield, who dressed the wound which progressed satisfactorily until the 10th when the patient was seized with spasm of the muscles of the neck and jaw, followed by difficulty in swallowing. A diagnosis of tetanus was made and Mr. Magee gave two injections of antitetanic serum, ten cubic centimetres each, before sending him to the hospital on the 12th.

On admission at 2 P.M. there was found marked rigidity of the muscles of the jaw, neck, and abdomen. He was unable to separate the teeth, risus sardonicus was present to some extent, and he was sweating profusely. The temperature was 99·8° F., the pulse was 88, and the respirations were 32. He was put to bed, ten cubic centimetres of antitetanic serum were injected subcutaneously at 4.30 P.M. the same evening, the wound was thoroughly cleansed, and a carbolic compress, 1 in 40, was applied and changed every four hours. He continued much the same till June 14th, when he had a tetanic convulsion at 4.45 P.M. and ten cubic centimetres of serum were injected at 6.30 P.M., to be followed at 8 P.M. by another attack. The spasms were controlled by chloroform. Between midnight on the 14th and 5 A.M. on the 15th, at intervals of rather less than an hour, the patient had seven very severe tetanic seizures, in some cases with opisthotonos, during which respiration was seriously interfered with, and chloroform was freely administered, artificial respiration being resorted to during the worst attacks. Bromide and chloral given per rectum produced no apparent benefit.

Any attempt to feed the patient or to touch him at this period brought on a spasm and he was therefore left as quiet as possible till at 5.15 P.M., June 15th, on trying to pass a nasal tube for feeding purposes, another violent convulsion was induced. He was again anæsthetised and 30 grains of chloral hydrate were passed by the stomach tube. This was retained and the patient slept quietly for several hours. He felt better on waking and was able to take liquid nourishment by the mouth but was unable to separate the jaws. He continued to be more comfortable until 2 P.M. on the 16th, when he had a slight spasm from turning himself in bed. He was given 15 grains of chloral hydrate by the mouth and was quiet again till 1 A.M. on the 17th, when he had another slight spasm for which a similar dose was administered. The highest temperature recorded was on the 15th when it reached 101·6° F. at 2 P.M. The pulse was 104. The patient sweated profusely during the attacks and thirst was extremely marked. The wound was now dressed with a strong solution of sanitas in the hope of inhibiting the development of fresh organisms.

On June 19th it was decided to try curare and at 6 P.M. one-twelfth of a grain was given subcutaneously. He had a spasm at 1 A.M. on the 20th, for which a further one-twelfth of a grain was injected at 1.20 A.M., after which he remained free till 8.45 A.M., when another seizure took place for which he was given 20 grains of chloral hydrate at 8.55 A.M. At 4.40 P.M. a fresh attack came on and curare, one-sixth of a grain, was injected at 5.40 P.M. He had a slight spasm at 8.30 P.M. and again at 8.45 P.M. 30 grains of chloral hydrate were given by the stomach tube under chloroform. At 9.15 P.M. ten cubic centimetres of serum were injected, but another sharp spasm came on at 11.15 P.M., followed by slight attacks at intervals of about two hours, until at 5 P.M. on the 21st he had a very severe convulsion, which as usual was controlled by chloroform. A similar event occurred at 1.10 A.M. on the 22nd and one-third of a grain of curare was injected at 1.15 A.M. Except for the constant state of rigidity of the muscles he was now fairly comfortable. Slight spasms manifested themselves at 4.40 and 4.50 P.M. on the 22nd and at 6.5 P.M. he was given half a grain of curare. At 10.20 P.M. 30 grains of chloral hydrate were administered by the stomach tube under chloroform to induce sleep and at 1.35 A.M. on the 23rd two-thirds of a grain of curare were injected. The patient felt better after this, the jaws could be separated slightly, and he was free from spasms, but as a precautionary measure five-sixths of a grain of curare were injected at 1.15 A.M. on June 24th with steady improvement and the same night at 8.20 one grain of curare was given. The temperature this day was 100·4°, the pulse was 120, and the respirations were 54. The teeth could now be separated fully a quarter of an inch and in order to see whether any change would occur the curare was discontinued. June 25th passed uneventfully, but at 6.30 P.M. on the 26th another severe convulsion made its appearance, with close apposition of the teeth once more. At 6.45 P.M. one grain of curare was injected and the same dose was repeated at 1.35 A.M. on the 27th without recurrence of spasm. The jaws could again be separated as before and accordingly curare was continued once every 24 hours in increasing doses up to two and a half grains at 1.30 A.M. on July 1st, when very marked improvement set in. From this date a daily administration of one grain of curare was kept up until the 9th, when he was able to use his jaws to masticate food, and then half a grain till the 20th, with steady reduction in the tonicity of the muscles. Active treatment was discontinued after July 20th, he developed an excellent appetite, and put on flesh rapidly. The patient was placed out-of-doors on June 27th in a recumbent position to have the advantage of the bright sunshine and daily afterwards when weather permitted. A month after the onset of tetanus he was able to walk about and on August 13th he left the hospital quite well.

Remarks by Dr. CONNOLLY and Dr. CULLEN.—The case presents some features of interest, viz.—(*a*) Incubation period (seven days). Some recent statistics have placed the mortality at 96 per cent. in cases where tetanus manifests itself under ten days after injury. (*b*) Number of spasms: 16 severe and 14 less severe, 30 altogether. (*c*) Marked improvement under treatment with curare and recurrence of the spasms when it was stopped during the active stage of the disease. In all $26\frac{2}{3}$ grains of curare were given hypodermically. No ill effects on the heart were observed and the patient said that he felt more comfortable and could breathe more easily after the injections.

Mr. W. J. Symes, under whose care the patient was admitted, has kindly permitted us to record these notes.

WEST CORNWALL MINERS' AND WOMEN'S HOSPITAL, REDRUTH.

CASES OF ABDOMINAL SECTION PERFORMED FOR INTUSSUSCEPTION AND PERFORATING GASTRIC ULCER.

(Under the care of Dr. JOHN H. TONKING.)

IN these cases, which were three in number, one patient suffered from intussusception and the other two from perforating gastric ulcer. The case of intussusception terminated fatally; of the other two patients one recovered and the other succumbed on the eleventh day after an operation for subphrenic abscess. Including these, three operations for perforation, all performed by Dr. Tonking, have taken place at this hospital during the last 12 months.

CASE 1.—The patient was a man, about 40 years of age, who was seized with acute abdominal pain on Jan. 18th. There was great tenderness equally in the appendicular region and in the epigastrium and hot opium fomentations were applied at 1 P.M. At 6 P.M., as no relief was felt, a consultation was held with Dr. Frank Hichens of Redruth, when perforation was diagnosed, and as the man's wife admitted having had considerable difficulty with regard to his food the perforation was considered to be probably in the wall of the stomach, although there was marked appendicular tenderness. The liver dulness was normal and there was no vomiting; the abdomen was absolutely rigid and typical facies was present. At 9 P.M. ether was administered by Dr. William Blackwood and assisted by Dr. Hichens Dr. Tonking opened the abdomen. Gas immediately escaped and a perforation was found at the pyloric end of the stomach close to the lesser curvature. The abdomen was swabbed but no irrigation was used as there was no extravasation. The position rendered tucking in difficult, and partly by turning in and partly by stitching the omentum over the perforation was closed by a double layer of fine silk sutures. A drainage-tube with a gauze wick leading to the perforation was placed in the wound after swabbing the parts dry without irrigation and the wound was closed. The usual rectal feeding was employed for five days with the addition of strychnine when required. The temperature, however, did not come down but remained between 100° and 101° F. for a week when dulness was discovered at the right base. This increased and on the tenth day, after exploring with a needle in the ninth interspace, pus was let out by excising a portion of the tenth rib. The temperature still did not come down and the patient died on the next day. There were no stomach symptoms and the abdominal wound had practically healed.

CASE 2.—The patient was a youth, aged 19 years. He was staying in Camborne for Easter Monday and after dinner was walking in the town when he was seized with agonising pain in the abdomen for which each of his friends suggested a different variety of spirit. After taking whisky, brandy, rum, and gin without relief he was put into a cab, in the bottom of which he lay doubled up, and was in this way taken home. Dr. Tonking was informed that he had suffered for months from distress an hour or more after meals. The abdomen was board-like. There was repeated vomiting of material having a spirituous odour. The liver dulness was normal. The patient was removed to the hospital and after arrival there the liver dulness was found to have disappeared. At 8 P.M.—namely, five hours after the attack—ether was administered by Dr. Blackwood and Dr. Tonking, assisted by Dr. Hichens, opened the abdomen. There was an immediate escape of gas and a small perforation of the size of a pea, which was found near the pylorus at the lesser curvature, was tucked in and fixed by two rows of silk sutures. The t[illegible]perature at the time [illegible] day it was 102°, an[illegible]adually to normal b[illegible] employed, together [illegible] On the fifth day gradually increasing quantities of food began to be given. The drainage tube was removed on this day and recovery was uneventful. Calomel was given on the fourth day. After one month of milk, plasmon jelly, and similar diet *solid food was gradually given. The patient left the hospital* after six weeks with no gastric symptoms.

CASE 3.—The patient was aged 11 months and was seized on May 18th with pain in the abdomen like colic. The child was nursed by the mother and a little Mellin's food was given as well. The patient was seen by a medical colleague and the condition was treated by him as colic. On the third day, during the absence of this practitioner, Dr. Tonking was called in and found a child who for three days had been suffering from paroxysmal pain and for the last 24 hours there had been a blood stained mucoid anal discharge. Per anum a tumour could be felt, the contour of which was suggestive of the cervix uteri. No abdominal tumour could be felt, the abdomen was distended. On the same day (May 21st) the child was admitted into the hospital where ether (Rendle's mask) was administered by Dr. Blackwood and the case was examined with the assistance of Dr. Hichens. No tumour could be felt a circumstance which was attributed partly to the child being fat and well nourished and partly to the abdominal distension. The abdomen was opened in the middle line and as it was found impossible to deal with the intussusception a cross cut was made towards the left side. After this the intussusception was readily reduced, in fact, on the least pressure it ran up the intestine like a mouse creeping on until within the last six inches, after which every effort (even pressure to partial rupture of the peritoneal coat) failed to reduce it. As reduction was impossible the [illegible] found to be [illegible]on was excised [illegible] the returning [illegible], however succumbed to the operation owing to the length of time involved and to the unfortunate delay in recognising the condition. The intussusception was of the ileo cæcal variety, the apex being the ileo cæcal valve.

Remarks by Dr. TONKING.—The last case shows the ease of reduction of an intussusception up to a certain point and the uselessness of water or air injection to deal with the last few inches in an intussusception if there is any marked swelling. It likewise demonstrates the ease of reduction if such cases are recognised at once.

Reviews and Notices of Books.

The Examination of Waters and Water Supplies. By JOHN C. THRESH, D.Sc. Lond., M.D. Vict., D.P.H. Cantab. London: J. & A. Churchill. 1904. Pp. 460. Price 14*s.*

THE value of chemical and bacteriological analysis respectively in regard to the determination of the purity of water supplies has been doubted by various observers from time to time. The first opponents to bacteriological analysis were generally the old school of analytical chemists who pinned their faith to chemical methods. On the other hand, not a few bacteriologists at one time looked upon the chemical analysis of potable waters as without value. The fact is that both chemical and bacteriological methods have their discrepancies and this view has now come to be shared by all concerned. There are instances in which it has been known that slight contamination of a water has taken place and yet chemical analysis has given practically negative results, while organisms of the colon series were readily detected by bacteriological methods. Owing to the splendid investigation that has been directed to the isolation and recognition of the flora of sewage it would seem that the detection of pollution so slight as 1 part per 1,000,000 can be effected by bacteriological means. On the other hand, if a considerable time has elapsed since the pollution took place the recognition of impurity by bacteriological processes becomes uncertain. The same applies to chemical analyses, though in this instance, in spite of purifying influences at work, the products of combustion, so to speak, may be found. Thus nitrogen previously existing in organic matter and ammonia may be ultimately present as nitrate. In surface water it is certain that ammonia and nitrites are scarcely ever present to any extent without sewage contamination. Valuable as may be the indications given in a carefully conducted chemical analysis, one very important fact must ever stand out in favour of bacteriological examination and that is that in the case of filtered supplies the purifying work of the filter bed is essentially bacteriological and therefore the efficiency of the filter bed can only be controlled by instituting bacteriological analyses of the effluent. Dr. Thresh has had the advantage of considerable practical experience with both methods of analysis and in his book on the subject he sees no reason for abandoning chemical methods. "In recent years," he says, "bacteriology has come to the aid of chemistry, and there is now a general opinion that a bacteriological examination is more important than a chemical analysis. This is undoubtedly true in some cases but not in all. A properly made bacteriological examination may often afford indications of pollution which no chemical analysis could possibly detect, but I am afraid that the inferences drawn from the results of many so called bacteriological examinations are often as fallacious as those derived from the results of chemical analyses. When we find that waters used for long periods by large communities are condemned by bacteriologists as being dangerously polluted, and that the results obtained from the same water by different bacteriologists differ to an extent which is impossible in a chemical analysis, our faith in bacteriological examination is somewhat shaken. In any case a proper bacteriological examination is far more tedious and more troublesome to perform than a chemical analysis, and the results are even more difficult to correctly interpret." He very properly, however, emphasises the importance of making a microscopical and biological examination of suspended matter in drinking water for "very often such an examination reveals more quickly and certainly the character of a water and some defects in its source than either a chemical or bacteriological analysis. In several instances such an examination has led to the discovery of sources of pollution which had been overlooked at a careful inspection."

Dr. Thresh's remarks upon the importance of making careful inspection of the source of supply should be very carefully considered by those engaged in analysis. Often the examination of the source of supply has given him far more important information than could be obtained from the analytical results. The examination of the source in numerous instances in which the supplies were the cause of outbreaks of disease was the means of affording information without which the chemical, bacteriological, or microscopical examination of the water "could not have been correctly interpreted." Part I. of his book, since it deals with the examination of the sources from which the water is derived, is therefore of the greatest importance. In Part II. the various methods of examining water and the interpretation of the results are very thoroughly considered and in Part III. the analytical process and methods of examination are set forth in practical detail. The chapter on Bacteriological Examination of Water will serve as an eminently practical guide to the bacteriologist. Dr. Thresh has wisely kept within the limits of the application of bacteriology to the differentiation of pure from polluted waters and points out concisely and clearly the lines upon which it is safe to proceed. In choosing this course he is supported by the evidence

LIBRARY TABLE.

Manual of Midwifery. By W. E. FOTHERGILL, M.A., B.Sc., M.D. Edin. With double Coloured Plate and 86 Illustrations in the text. Third edition. Edinburgh: W. F. Clay. 1903. Crown 8vo. Pp. 506. Price 9*s.* net.—Dr. Fothergill has succeeded in revising this edition of his book on midwifery without increasing its bulk, so that it retains its former convenient size. The chief alterations are to be found in the description of the development of the membranes and placenta in which the work of Spee and Peters is included. The whole of this chapter has been rewritten and it now contains a very good account of the development of the early ovum, illustrated by numerous drawings, mainly taken from Whitridge Williams's book on "Obstetrics." Besides this we note that a short description of chorion-epithelioma has been added and the author brings forward his view that "the function of the decidual cells is to destroy chorionic epithelium when the latter unduly invades the maternal tissues in contact with the ovum." The ovum is a parasite whose external cells exercise a phagocytic action upon the superficial portion of the decidua. But the decidua resists invasion by producing the decidual cells, which in their turn have a phagocytic action upon the chorionic epithelium. Failure on the part of the decidual cells to exercise this function may be supposed to allow of the admission of fragments of living chorionic epithelium into the maternal tissues. Dr. Fothergill does not approve of Bossi's dilator; when the cervix is softened dilatation by the finger is, he says, easy, and when the cervix is unsoftened Bossi's dilator is slower, more uncertain, and probably more unsafe than the use of multiple incisions. We cannot agree with him in these views. It is a pity that he should perpetuate the use of the inaccurate term "hydatid mole." There is no reference in the index to deciduoma malignum and the binding of the book leaves much to be desired. As we have said of former editions, however, the manual is a good one, clearly and well written, and we can recommend it to students.

On the Classification and Pathology of Beri-beri. By HAMILTON WRIGHT, M.D. McGill. London: John Bale, Sons, and Danielsson, Limited. 1903. Pp. 74. Price 3*s.* 6*d.* net.—The author of this work first devotes a page to a recapitulation of his previous papers on the subject, in which he endeavoured to show that the incubation period of the disease is short—from seven to 14 days; that it is an acute or subacute infectious disease due to a specific organism not yet certainly determined; that the organism is not one whose special habitat is any food such as fish or rice but one that may, nevertheless, be ingested in any food and drink accidentally contaminated; that the organism multiplies in the contents of the stomach and small gut; and that it there elaborates a toxin which, being absorbed, poisons certain neurons and thus gives rise to a group of symptoms which can be classified. In the book now under notice the author discusses more fully the classification and pathology of beri-beri. He endeavours to make it clear that there is not only clinical evidence but also indisputable post-mortem evidence that beri-beri must be regarded as an acute infectious disease having a definite primary lesion. He proposes the following classification: (1) acute pernicious beri-beri, in which the onset is sudden, with more or less severe symptoms of gastro-duodenal irritation and cardiac paralysis; (2) acute beri-beri, in which the onset is sudden, though never so sudden as in acute pernicious beri-beri, with more or less noticeable symptoms of gastro-duodenal irritation and concomitant vaso-motor and sensori-motor paresis; (3) subacute beri-beri, in which the onset of the disease is more insidious, in which the gastro-duodenal irritation may escape notice and in which the paresis may be so slight as to involve only one or two movements, a few areas of sensation and the vascular supply to the front of the legs; and (4) beri-beri residual paralysis or neuritis, or the disease as it appears after the symptoms of gastro-duodenal irritation have disappeared and after the causal organism and its toxin have accomplished their work and have been eliminated. A report of observations made both clinically and post mortem in each of these classes of cases of beri-beri follows and 17 cases are given in clinical and pathological detail in support of the classification. The book is illustrated by three plates (two coloured); there is also a useful table of references. The author draws attention to the fact that the mode of action of the causal organism of beri-beri presents some analogy to that of diphtheria.

Census of India, 1901. Vol. I. Ethnographic Appendices, being the Data upon which the Caste Chapter of the report is based. By H. H. RISLEY, I.C.S., C.I.E. Calcutta: Office of the Superintendent of Government Printing, India. 1903. Pp. 251. Price Rs.3 or 4*s.* 6*d.*—This volume contains in the form of appendices the principal data upon which the caste chapter in the first volume is based. In accordance with the order of treatment adopted in that chapter the physical evidence has been set out first. It consists of summaries of measurements and diagrammatic seriations of the data which serve to establish the types. The data are the proportions of the head, proportions of the nose, relative prominence of the root of the nose, and the stature. Appendix II. deals with the social grouping of the different tracts of country. Appendix III. consists of maps—a general map locating the main physical types and a number of small maps illustrating the distribution of the more important tribes and castes. Appendix IV., which occupies the greater part of the volume, comprises a number of accounts, derived from various sources, of some typical tribes and castes of the various ethnic regions. The selection has been made with the object of covering as much ground as possible and giving within a moderate space, yet in fairly full detail, a description of some of the chief constituent elements of the population of India. The last appendix, No. V., deals at length with the "Modern Theories of Caste." It is by Mr. J. C. Nesfield, Sir Denzil Ibbetson, K.C.S.I., and M. Emile Senart. The theories of these observers have already been referred to in the main chapter. Sir Denzil Ibbetson gives at some length what seems to him the fundamental ideas upon which caste is based. His theories have already appeared in the census report of the Punjab for 1881. The whole volume is an interesting one and will repay the student of ethnology for the time expended in its study.

JOURNALS AND MAGAZINES.

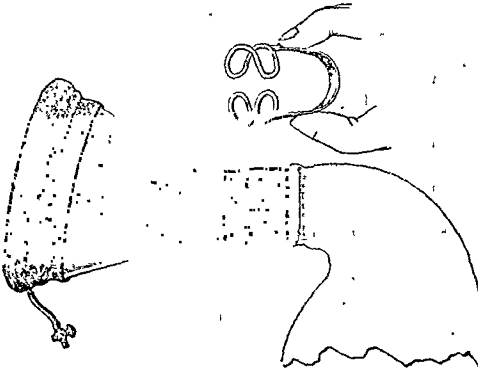
The Journal of Physiology. Edited by Sir MICHAEL FOSTER, K.C.B., F.R.S., and J. N. LANGLEY, F.R.S. Vol. XXXI., No. 5. London: C. J. Clay and Sons. August 22nd, 1904. Price 8*s.*—The articles contained in this number are as follows: 1. The Influence of Changes in the Intraocular Circulation on the Intraocular Pressure, by E. E. Henderson, F.R.C.S. Eng., and E. H. Starling, F.R.S., with nine figures in the text. The authors show that the intraocular pressure in cats and dogs, which were the animals experimented on, is a function of the blood pressure in the ocular blood-vessels and varies directly with this. Stimulation of the cervical portion of the sympathetic causes first a rise and then a fall of intraocular pressure, the former effect being due to contraction of the orbital unstriated muscle, the latter to contraction of the intraocular blood-vessels. Stimulation of the peripheral end of the divided fifth nerve root causes a rise of pressure due to contraction of the orbital unstriated muscle; this effect was absent after extirpation of the superior cervical ganglion and degeneration of the fibres passing from it to the Gasserian ganglion. There is no evidence of the presence of vaso-dilator fibres either in the fifth or in the sympathetic nerves. The effects of adrenalin and nicotin on the eye vary with the preponderance of local or general effects on the blood-vessels. 2. The Influence of Fasting and Feeding upon the Respiratory and Nitrogenous Exchange, by M. S. Pembrey, M.D. Oxon., and E. I. Spriggs, M.D. Lond. This article gives the results of numerous experiments on the metabolism of the body in rats during successive periods of fasting and feeding. 3. The Protective Value of Proteids and their Decomposition Products on Trypsin, by H. M. Vernon, M.D. Oxon. The method employed was to expose a known percentage of the substance for one hour at 38°C. to pancreatic extract with 0·4 per cent. of sodium carbonate and then to determine the amount of trypsin destroyed. Dr. Vernon finds that when no proteid is present 56 per cent. of the ferment is destroyed, but only 7 per cent. in presence of 4 per cent. of proteid. 4. On the Action of Oxygen at Low and High Pressure upon the Corneal Endothelium, by G. Bullot, assistant in physiology at the University of California, with eight figures in the text. The figures show the curious differences which result in the vitality of the endothelium after enucleation and scraping off the epithelium from the cornea, loss of vitality commencing at the periphery and proceeding towards the centre with low pressures and in the opposite direction with high pressures. 5. The Union of Different Kinds of Nerve Fibres, by J. N. Langley, F.R.S., and H. K. Anderson, M.D. Cantab. 6. The Elasticity of Animal Tissues, by J. B. Haycraft, M.D., with 23 figures in the text. Dr. Haycraft finds that all of the simple tissues of the body follow Hooke's law when they are stretched within physiological limits. The relaxing appears to vary and Hooke's law is not always observed. 7. On the "Sham Death" Reflex in Spiders, by T. Brailsford Robertson, with one figure in the text. Mr Robertson finds that with the nervous system intact "sham death" is a complete tetanus and is not due to the conscious volition of the animal, but is a reaction necessarily consequent on the structure of its nervous system. In some species it can be carried out by the thoracic segments alone, in others the head ganglia require to be intact. 8. On Autogenetic Regeneration in the Nerves of the Limbs, by J. N. Langley, F.R.S., and H. K. Anderson, M.D. Cantab. The experiments of these observers, so far as they go, are decidedly in opposition to the autogenetic theory. This number of the journal also contains the Proceedings of the Physiological Society.

The Phonographic Record, September, 1904.—In this issue the lecture by Sir W. R. Gowers on Chorea and its Neuronic Aspect is concluded. The lecturer states that "if we grasp the idea that multiplicity is the equivalent of size, and that common function involves a common constitution, identical through a vast series of minute structures, and also a common liability to suffer from the same influences, much of the difficulty of conceiving chorea as a dendritic disease will disappear." Mr. Norman Porritt describes chloride of ethyl as the anæsthetic *par excellence* for minor operations and discusses a form of apparatus made by Messrs. Down Brothers at his suggestion for the administration of the drug. Dr. E. B. Gray has written a note on a variety of kidney (a single kidney of double size) found at the post-mortem examination on a woman who had been run over. Another note relates to the case of a woman, aged 63 years, who left off eating fruit and vegetables for 12 months because she had "suffered from indigestion" and at the end of that time had well-marked scurvy, which was cured by five weeks' remedial feeding in hospital.

New Inventions.

A NEW INHALER FOR ETHYL CHLORIDE.

THE accompanying illustration shows a modified form of wide bore ethyl chloride inhaler. As there is no lint in the face-piece the patient's face can be seen throughout the administration. The neck of the bag fits over that of the face-piece and can be freely rotated about it. Corresponding openings are made in the inner and outer necks and when these coincide the anæsthetic can be sprayed through them into the bag. Within the neck of the face-piece is a bit of lint fixed (opposite the aperture) by a clip so as to form a pocket which is open towards the bag; just as an aortic valve forms a pocket open towards the aorta. The lint minimises reflux of the spray into the face-piece and economises the anæsthetic. When a gag is used the inhaler can be applied *uncharged* the moment the gag is adjusted and then can be charged during a convenient expiration. After a breath or two the air-way is closed by slightly rotating the neck of the bag. This inhaler is especially useful in dealing with the large numbers of children met with in hospital practice, as about 18 cases of adenoids and tonsils can be operated upon per hour when anæsthetised as described. The inhaler is made by Messrs. Allen and Hanburys, with one face-piece, for a guinea. A smaller size face-piece can be supplied, the two sufficing for all cases.



Burwood place, W. A. BERESFORD KINGSFORD.

A NEW INGUINAL COLOTOMY BELT AND A MODIFIED HERNIA TRUSS.

A VARIETY of expedients have been adopted for securing the dressings and coverings requisite in the treatment of colotomy. Some of these are, no doubt, more successful than others and I find that an inguinal colotomy belt, which has been made at my request, fulfils all requirements. The usual indiarubber bag or pouch has been dispensed with and replaced by a wire vaccination shield affixed to a light abdominal belt, which is well shaped to grip the pelvis. The shield is lined with the ordinary green protective and can be filled with absorbent tow or wool, either carbolised or charged with charcoal, thus providing a cleaner and more efficient method of dealing with the fæces than the usual pouch. In order to prevent the belt slipping upwards and so displacing the receptacle buttons are sewn along its lower border and these fix it to tightly fitting bathing drawers or pants furnished with button holes and drawn up over the belt. In this way perineal bands are avoided and great comfort is obtained. In my earlier cases of colotomy the belt was always a trouble [illegible] hs are due to Messrs. [illegible] ited, Victoria-bridge, [illegible] tions and producing a [illegible]

The sa [illegible] ule a specially soft and flat pad for hernia trusses.

HERBERT LUND, F.R.C.S. Eng.

St. John-street, Manchester.

THE LANCET.

LONDON: SATURDAY, SEPTEMBER 17, 1904.

Uncertified Mental Incapables.

We have already referred to the fact that, to quote the official announcement, "the King, on the recommendation of the Home Secretary, has been pleased to appoint a Royal Commission to consider the existing methods of dealing with idiots and epileptics and with imbecile, feeble-minded, or defective persons not certified under the lunacy laws; and, in view of the hardship or danger resulting to such persons and the community from insufficient provision for their care, training, and control, to report as to the amendments in the law or other measures which should be adopted in the matter, due regard being had to the expense involved in any such proposals and to the best means of securing economy therein." In an age remarkable for its spirit of inquiry and investigation and for an abounding philanthropy it is not surprising that the Home Secretary, as the public official mainly responsible for the internal well-being of the community, has at last been impressed with the total inadequacy of the provision made for dealing with the enormous class of mental incapables who, not being certified lunatics, are unfit either to earn a livelihood or to look after themselves or their affairs. Whether these weaklings are merely idle and mischievous vagrants or unsightly and unwholesome domestic burdens, liable to suffer neglect and ill-treatment, or whether they have active criminal tendencies themselves or show an aptitude for crime as tools in the hands of others, they are all more or less a public evil and a source of trouble, anxiety, and danger. They may be said to be "no good to anybody" and it is fitting that the State, standing *in loco parentis*, should, by appointing a Royal Commission on the subject, indicate its responsibility with regard to every member of the community who is, by nature or from disease, idiotic, epileptic, imbecile, feeble-minded, or defective, but not certified under the lunacy laws.

The reference under which the Commission is to act is no doubt a comprehensive one but if we understand it aright it appears to us to be framed so as to exclude the consideration of at least two groups of cases of mental disorder or defect as to the treatment and management of which the public would be glad to have a pronouncement by a Royal Commission after full inquiry. The first group consists of those cases of mental incapacity arising from incipient or oncoming insanity taken at the time when the questions of certification and protective supervision have to be decided. Evidence given before a Royal Commission would be of the utmost value when, if ever, the proposed legislation on this matter comes up for consideration in Parliament. We are willing to admit that this group does not appear to come immediately within the scope of the reference and its omission may be due to a supposed irrelevancy and to the fact that the Bill dealing with it is in the hands of the Attorney-General and his department. The other group of cases consists of the many certified lunatics in asylums who by reason of the chronicity of their disease have degenerated into simple harmless imbeciles corresponding to all intents and purposes with the uncertified imbeciles whose case is to be considered by the Commission. These men and women have accumulated in all our public asylums to such an extent that they are largely the cause of the indefinite expansion of those institutions. We think that it will scarcely be possible for the Commission so to frame its report as to exclude a *modus vivendi* other than the lunatic asylum for this class of imbecile. At all events, any provision of an economical sort made by the Commission for the imbeciles included in its reference will not unjustifiably have to be considered by asylum authorities with a view to the possible discharge of their harmless imbecile population.

The work of the Commission is comprised under two heads—viz., to consider the existing methods of dealing with uncertified mental incapables and to report as to the amendments in the law or other measures which should be adopted in the matter—and we are convinced that most useful and valuable information will be derived both from the evidence and from the report. The Commissioners will have their highest aspirations somewhat curtailed by the rider to the reference which intimates that due regard is to be had "to the expense involved in any such proposals and to the best means of securing economy therein." Their proposals will perforce lie between the Scylla of legislative enactment involving questions of personal liberty and an annual grant and the Charybdis of economy with due provision for control, maintenance, and supervision. We have no fear that, if the Commissioners are able to make out a case, the public will be otherwise than willing to ratify their recommendations in a matter in which the best and healthiest interests of the community are involved. The following is the constitution of the Commission: the Marquis of Bath (chairman), Mr. William Patrick Byrne, C.B., Mr. Charles Hobhouse, M.P., Dr. Frederick Needham, Mr. Henry David Greene, K.C., M.P., Mr. Charles Edward Heley Chadwyck-Healey, K.C., the Rev. Harold Nelson Burden, Mr. Willoughby Hyett Dickinson, Mr. Charles Stewart Loch, and Mrs. Pinsent. The names of the Commissioners are a guarantee that the work will be thoroughly and efficiently carried out. But in a matter so largely of medical import in the domain of mental hygiene we may be pardoned if we take the liberty of pointing out that while the terms of the reference explicitly exclude the area covered by the lunacy laws the only medical man on the Commission is Dr. Needham, the whole of whose life has been spent in the administration of those laws either as an asylum superintendent or a Commissioner in Lunacy. In view of the remarks which we have made with regard to the scope of the inquiry it will readily be understood that we look upon Dr. Needham's appointment on the Commission as most fitting and proper, but several names occur to us, as they will to others, of men of vast medical experience, not necessarily official, among the classes under consideration any one of whom might have been selected and appointed as a member to act with him as a professional colleague in examining the witnesses and in dealing with the evidence submitted on a subject so full of intricacy and responsibility.

Infantile Diarrhœa.

DURING the late summer and early autumn months the mortality due to gastric and intestinal affections in infants is always high and this year in certain towns the number of deaths has been unusually large. This fact has been commented on by our correspondents in Ireland and Liverpool.[1] At the meeting of the Dublin public health committee held on August 16th the death rate for the previous week was reported to be 28·1 per 1000 and of this large mortality no less than five deaths in every 1000 were due to diarrhœa. At the meeting of the Liverpool health committee held on August 18th attention was also drawn to the prevalence of diarrhœa and the high death rate of the city for the previous two weeks, which had reached the figure of 37·7 per 1000.

Diarrhœa is essentially a symptom dependent on various morbid causes. In infants it is most frequently the consequence of inflammation brought about by the direct irritation of the intestinal mucous membrane by improper feeding. One of the most important etiological factors concerned in this affection is undoubtedly the ignorance of the mothers. A very large number of women more especially among the poorer classes have not the least idea of the proper management of children and if the natural food—human milk—cannot be supplied the lot of the infant is often hard indeed. The out-patient departments devoted to the diseases of children are crowded with such cases, the unfortunate little patients either being afflicted with gastro-enteritis or practically dying from starvation. The treatment of these conditions is beset with considerable difficulties. The mothers or the custodians are firmly imbued with the idea that "a bottle of medicine" is all powerful and will cure all infantile ailments irrespectively of dietetic irregularities and they resent any attempts at instruction as to how infants should be fed. Some authorities maintain that chilling of the surface may cause simple diarrhœa; infants when first short-coated occasionally suffer in this way. The above conditions are operative throughout the whole 12 months but the rapid alterations of temperature that so often occur during the late summer in this country are particularly likely to be followed by an extensive outbreak of diarrhœa amongst the children. Dr. EUSTACE SMITH[2] points out that rickety subjects, probably on account of the profuse perspiration to which they are liable are especially prone to suffer from these atmospheric changes and in infants who are teething the process of dentition, as it excites a certain amount of fever, is often accompanied by a mild relaxation of the bowels. The most severe forms of diarrhœa occur during the summer heat, and some interesting observations have been made to explain this seasonal increase of intestinal irritation. The late Dr. HILARY TOMKINS, Dr. J. PRIESTLEY, and others have demonstrated that the diarrhœa death rate follows a rise in the temperature of the earth—the hotter the summer the further will the heat penetrate into the earth. Consequently, at the end of a hot season, such as has been experienced this year, the mortality from infant diarrhœa is found to be high. Further, this disease is rarely seen out of large towns and many observers regard the affection as a contagious zymotic disease. The presence of a pathogenic organism has been frequently sought for and many forms of microbes have been isolated from the stools. Dr. V. C. VAUGHAN obtained from certain micro-organisms albuminous products which when injected under the skin of kittens caused vomiting and purging and if in sufficient quantity collapse and death. As yet, however, no special organism has been found to be invariably associated with the attacks. In all probability milk is the chief medium by which the germs find their way into the alimentary canal. Inflammatory conditions in the cow probably have a pernicious effect on the milk. During certain epidemics of acute gastro-enteritis the streptococcus longus was found in the milk supplied by cows that were suffering from mastitis. Dr. HOLST who investigated these cases states that these cocci when injected into mice and rabbits, set up diarrhœa and when swallowed by himself caused colic and vomiting. Dr. EUSTACE SMITH observes that in the most virulent cases of infantile diarrhœa the whole course of the illness points to a septic origin, especially as the patient often dies, not merely exhausted by the drain from the bowels, but in a state of nervous collapse which may continue for many days after the character and the number of the stools have ceased to be a cause for anxiety. Another significant fact is that this septic variety of diarrhœa attacks strong subjects as well as weakly ones; indeed a condition of sturdy health, although it may influence the issue of the illness, seems to afford little protection, if any, against its onset. On the other hand, a delicate child is more prone than a strong one to suffer from the non-septic forms of purging.

The above considerations suggest certain measures which might be adopted to prevent the very extensive occurrence of infantile diarrhœa. In the first place, careful supervision of dairies and cowsheds during the summer months should be insisted on and any case of mastitis carefully treated. It would be desirable that further investigations should be made in order to ascertain the infective nature of the milk, both boiled and unboiled, obtained from cows suffering from this affection. Liverpool has set an excellent example in establishing depôts from which parents can obtain sterilised milk and this plan has proved successful in diminishing the death rate from diarrhœa. The most important matter, however, is to try to adopt some means by which instructions could be given to women as to the proper management of children. Unfortunately, there appears to exist much prejudice against tuition on the part of those immediately concerned. As our Liverpool correspondent points out, there are thousands of mothers who cannot suckle their children but there are also a very large number who refuse to give their infants sterilised milk. If classes could be formed at which instruction could be given in those matters, not only to the married women amongst the poorer classes but also to district nurses and visitors, who might in their turn convey the necessary instructions to the mothers in their own homes, doubtless beneficial results would follow. As is well known, milk is liable to decomposition in hot weather and unless scrupulous cleanliness is observed in regard to the vessels in which the milk is kept, particularly the feeding bottles, evil results will surely follow. We have frequently pointed out the duties which devolve upon medical practitioners in educating patients suffering from pulmonary tuberculosis as to the prophylactic measures which they should adopt in order to prevent themselves becoming a danger to others. So in the matter of the artificial feeding of children a little instruction to the mothers and supervision of the surroundings would doubtless do much in the prevention of one of the most fatal of infantile diseases.

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[1] THE LANCET, August 27th, pp. 642 and 643.

[2] Clifford Allbutt's System of Medicine, vol. iii., p. 747.

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School Sanitation at Blackburn.

THE Health and Education Committees of the County Borough of Blackburn have given very remarkable evidence of the excellent spirit in which they have entered upon the important duties imposed upon them by the Education Act and have set an example which will, we hope, be widely followed in other localities. They have instructed their medical officer, Dr. ALFRED GREENWOOD, to make a complete investigation into the sanitary conditions of the 52 public elementary schools under their jurisdiction and his report, an octavo volume of over 400 pages, with detailed plans of the schools and numerous tables, has been published under their direction. Dr. GREENWOOD, it is hardly necessary to say, has acquitted himself in the most admirable manner and has produced a report which may well serve as a model for any who are called upon to undertake similar duties. He first summarises the rules for planning elementary schools which have been issued by the Board of Education, comparing them in some respects, and not always to their advantage, with those which are in operation in America; and after a general discussion of the questions of superficial and cubic space, of roofs, entrances, and staircases, of cloak rooms and lavatories, of lighting, of ventilation, of warming, of sanitary arrangements, of desks and seats, of water-supply, of sites and playgrounds, and of infants' schools, he gives a copy of the form which he employed for the purpose of systematically recording the results of his inspections—a form in which no single point appears to have been overlooked. A second chapter gives the detailed results of this inspection for every school, with a plan and measurements of every room in each, and with definite recommendations for the correction of every defect that was discovered. The third chapter contains the results of a chemical examination of the air of schools for carbon dioxide; the fourth, the results of a bacteriological examination; and the fifth is devoted to general recommendations in addition to the specific ones made for each school. The total result is that a comparison of the volume with the state of the schools at any future time will afford conclusive evidence of the extent to which the committees concerned have set themselves to remedy faults which have been officially brought under their notice and of which no one can now profess to be ignorant. Out of the mouth of their own officer the Blackburn authorities will in the future be either justified or condemned, and the publication of his report may be taken as an eminently hopeful indication of their intentions. In the meanwhile it is satisfactory to note that the quality of schoolroom air, as tested by the quantity of carbon dioxide, has definitely improved in Blackburn since the date of an examination made seven years ago, and Dr. GREENWOOD attributes the improvement to a better recognition of the importance of ventilation by the teachers.

The chapter of the report relating to the bacteriology of schoolroom air can only be described as somewhat meagre, or at least as descriptive of researches which might have been extended with advantage. They consisted only of the exposure in the rooms for short periods of gelatin or agar plates and of the subsequent counting of the colonies which grew upon them, without any attempt to determine the precise character of the bacteria concerned or the sources from which they were derived. Dr. GREENWOOD makes no reference to the work of FLUGGE on the identification of salivary bacteria suspended in the atmosphere—work which, if we are correctly informed, has recently been considerably extended by inquirers in this country, with especial reference to the distribution of such bacteria by speaking laughing, sneezing, coughing, or even by ordinary expiration. Many of our readers will remember a picture by MULREADY, now in the South Kensington Gallery, entitled "Choosing the Wedding Dress." It hangs at about sight level, and after it had been exhibited for two or three years the attention of the keeper of the gallery was directed to a marked change in the character of its surface—a change which was traced to the projection against it of an infinite number of droplets of saliva from visitors who had stopped in front of it and had laughed as they looked. The resulting film of dried saliva was cleaned away and the picture was then placed under glass for its protection. This coarse experiment, as well as the more delicate ones to which we have referred, must be held to show the importance of the bacteriological study of schoolroom air in relation to the spread of many infectious diseases, and not merely, as Dr. GREENWOOD appears to have regarded it, as a measure of atmospheric impurity. Even in this form, as it does not appear to have been employed previously at Blackburn, there are no data for a comparison between the present and earlier times; but it may be assumed that observations of a similar kind will be continued and extended, and that important results are likely to be obtained from them. It would, of course, be of special importance to examine suspended salivary bacteria at periods when diphtheria or other diseases affecting mucous membranes were prevalent in the district, and it is quite possible that timely warnings of danger might in this way be obtained.

We cannot leave the subject of school sanitation without calling attention to an extremely interesting pamphlet, reprinted from the *Medical Chronicle* for June, in which Dr. R. T. WILLIAMSON of Manchester, the delegate from the Victoria University of Manchester and the Manchester and Salford Sanitary Association to the first International Congress of School Hygiene, held in April at Nuremberg, gives an account of the proceedings in which he took part. It has long been evident to ophthalmic surgeons that a large proportion of the books used in schools are printed in such small and crowded type as to be exceedingly objectionable; and Dr. WILLIAMSON quotes from COHN a simple test of the fitness of a printed page for school use which ought to be universally known and employed. It consists of an ordinary card, say a visiting card, in the centre of which a square hole is cut, each side of which measures exactly one centimetre. The card with the centimetre square hole is placed upon the page to be tested, the lower margin of the hole being immediately above a line of print. If the type be satisfactory only two lines of print can be seen within the square, and, according to COHN, all books should be condemned in which this condition is not fulfilled. An account is given of a very simple and ingenious contrivance, also devised by COHN, for testing the illumination of every part of a room, the requirement to be fulfilled being that at least 20 small figures should be read in 30 seconds at a distance of 40 centimetres from the eyes. Dr. GREENWOOD and other medical officers of health who, like him, feel the importance of such an extension of their work as may bring the requirements of schools completely within their cognisance and under their control, may render good service by directing the attention of their committees to many matters of this kind, and it may be hoped that when the second International Congress is held in London in 1907 the contributions of Englishmen to its proceedings will be of sufficient number and importance to show that the value of the children of the nation, as part of its capital and as a support when speaking with its enemies in the gate, has not been lost sight of either by the members of the medical profession or by the various and sometimes rather heterogeneous local authorities to whose tender mercies the education of these children has been committed.

Annotations.

"Ne quid nimis."

HEALTH AND EDUCATION.

ONE of the most serious obstacles to the progress of sanitary reform in this, as, indeed, in most other countries, has been, and is, the indifference on the part of the masses to all ordinary considerations of personal hygiene. The public health in the aggregate mainly depends on the hygienic morality of the individual. No legislation can enforce the open window any more than it can stop expectoration in the streets. The only practical measure which holds out any prospect of success of improving the standard of personal hygiene among the people is to educate the rising generation in its elementary principles and in the advantages which are likely to accrue from their observance. That this method of utilising the receptiveness of the child's mind and of reaching the objective by a route apparently so circuitous is founded on sound principles and fruitful in practice is clearly evidenced by the marked improvement in the general appearance of neatness and cleanliness of the children who attend at the public elementary schools. But to engender a proper sense of the advantages of an enlightened domestic and personal hygiene it is not only necessary that the teachers themselves should have an adequate knowledge of the essentials of sanitation and hygiene, but also that the precepts which they teach should be pushed home by example and by a strict observance of their laws in the administration of the schools themselves. In this connexion the report of the committee intrusted by the British Association for the Advancement of Science with the duty of inquiring into the conditions of health essential to the carrying on of the work of instruction in schools has naturally been received with considerable interest. This report, which was recently read at the meeting of the association at Cambridge, embodied, among a number of other important considerations, draft recommendations for a course of study in hygiene to be pursued by those proposing to act as teachers in the public elementary schools. The proposed curriculum, though necessarily incomplete and schematic, cannot be regarded otherwise than as well adapted for fulfilling the purposes for which it is intended—that is to say, of providing a course of instruction in hygiene for teachers which will not only enable them in their turn to instruct their pupils in the ways of personal health but also to conduct the general management of the schools and class rooms with an intelligent appreciation of the aims and objects of hygiene and sanitation.

DIFFICULTIES OF CHLOROFORMISATION.

THE extreme difficulty which often confronts the anæsthetist is well illustrated in the clear notes furnished to us of a death under chloroform. The method which appears to have been carried out carefully is one which must always render irregular doses of chloroform possible. Care, such as was used in the present case, and experience undoubtedly lessen its dangers and many competent authorities rely upon the method and even regard it as one of the best competent hands. The facts of the case are as follows. On August 16th the patient, a male, aged 30 years, an ex-soldier, of somewhat slight physique and pale complexion, was anæsthetised in order to have a necrosed femur operated on. Examination prior to administration of the anæsthetic showed the chest, heart, and lungs to be apparently normal. *Chloroform was given from a drop-bottle on* a flannel mask. The patient passed easily to the second degree of anæsthesia, when he struggled with his arms for a second or two and then went on quietly taking the anæsthetic until the breathing being quiet and regular, the pulse about 90 and of fair quality, the pupils about three and a half millimetres, and colour as at the commencement of anæsthesia, he was wheeled into the theatre from the adjacent room and put on the table. Directly this was done the face became pale, the lips and ears cyanosed, the patient gave about eight or ten gasping inspirations like the inspiration of air-hunger, and respiration ceased. Immediately on the alteration of the colour and respiration the head was lowered and artificial respiration was commenced, and a hypodermic injection of strychnine and an enema of brandy were given. The administration of the chloroform had been stopped whilst the patient was being lifted from the stretcher on to the table. The heart failed when the change of colour took place before the complete cessation of respiration; this observation was made by the surgeon in charge of the case. Artificial respiration was persisted in for three-quarters of an hour but without result. The administration of the anæsthetic had been in progress for seven minutes; the amount of chloroform used was three and a half drachms. No necropsy was made. The salient features about the case, so far as can be judged without having witnessed the phenomena exhibited by the patient, appear to be: slight struggling, such as is common to the second degree of chloroform narcosis and failure of respiration ensuing upon lifting the patient from the wheeled couch on to the operating-table. We may presume that *during this struggling the chloroform mask was removed* from the patient's face. If this were not so an overdose would readily be given and its results might not show themselves can sustain life on the most widely different dietaries and we may take it that for the ordinary man that diet is the best on scientific and utilitarian grounds which affords the necessary proximate principles in the most assimilable form consistent with palatability and cheapness. That in this country this is attained by a mixed diet containing a small amount of animal proteid is a matter of general experience.

REVOLVING HOUSES.

ON, no doubt, quite sufficient grounds experts in hygiene are accustomed to lay a good deal of stress on the importance of correctly orientating dwelling houses, so that they may receive the maximum amount of light and of protection from cold winds. It certainly does appear that, in this country at any rate, the more the rooms in which we live are exposed to the rays of the sun the better, for sunlight seems to be at once stimulating to human vitality and destructive to that of many objectionable low forms of life. Experience has taught us to select as far as is practicable a southern aspect for our houses, but even when this is done the fixity of the structure prevents our regulating the supply of sunlight to different rooms according to our varied tastes. Two French gentlemen—Dr. Pellegrin and M. E. Petit, an architect of Paris—propose to change all this. They have designed a method of erecting houses on rotating platforms, so that the building can be made to face in any required direction at any time. The platform is supported on two concentric walls, the inner chamber so made containing a stairway, and the axis of rotation is occupied by a shaft through which pass the supply and waste pipes of the house. A gas or petrol engine is employed to move the platform—and if necessary it can be used to drive clockwork which will enable the house front to follow the sun during the day. There are obvious difficulties in the way of the general adoption of schemes of this kind but the idea is one worthy of the attention of British architects.

NEPHRITIS DUE TO BORAX.

THE extensive use of boric acid and borax as food preservatives has led to repeated controversies as to whether they are injurious to the consumer. The correspondence which is now appearing in our columns demonstrates the various opinions that are held and the difficulties that may arise in sifting evidence on the subject. The question is not easy to settle because a preservative which would cause obvious injury after being taken in food for a short time could not come into general use. Occasional ill effects, such as have been ascribed to boric acid, have been attributed to idiosyncrasy or regarded as a mere coincidence and due to other causes. The only other source of evidence is experiments on animals. It has been stated by Dr. Féré and others that the medicinal use of borax is attended by the risk of producing or aggravating renal disease but this has been denied by Liebreich. In the *American Journal of the Medical Sciences* for September Dr. Charles Harrington has described some important feeding experiments which support Dr. Féré's conclusion. 12 healthy cats were fed on the same food. One was given no preservative, six were given borax, and the remaining five were given a preservative which proved to be innocuous. The quantities of borax given to the cats were as follows: No. 1, 72·5 grammes in 133 days (average daily dose 0·54 gramme); No. 2, 112 grammes in 133 days (average daily dose 0·84 gramme); No. 3, 28 grammes in 42 days (average daily dose 0·66 gramme); No. 4, 108 grammes in 133 days (average daily dose 0·81 gramme); No. 5, 106·5 grammes in 133 days (average daily dose 0·8 gramme); and No. 6, 48 grammes in 56 days (average daily dose 0·85 gramme). Of the 12 cats three became ill and these had all taken borax. No. 4 soon sickened and died at the end of the sixth week. The other two were ill occasionally but during the last weeks of the experiments appeared to be normally active. At the expiration of the periods given above the remaining 11 cats were killed. The necropsies of those which had not taken borax showed no lesions. In the bodies of those which had taken it, with the exception of No. 2, nephritis was found. Stained sections of the kidneys showed lesions of the same character differing in intensity. The epithelium of the tubes, particularly of the convoluted tubes, was degenerated. The normal fat vacuolation was greatly increased and the cells were swollen and in places disintegrated with fragmentation of nuclei. In the lumen of many of the collecting tubules were granular masses representing cell fragments. Some tubules were almost completely stripped of epithelium. In one kidney the change was confined to intense degeneration with hyaline casts in the small tubes. In the others the degeneration was not so intense but was accompanied by foci of cellular infiltration, chiefly marked at the cortex. Where the infiltration was most intense the tubules were entirely destroyed. The lesions were analogous to those of subacute and chronic nephritis in man but did not correspond to any definite type. It may be objected that the daily dose of borax in proportion to weight was much greater than a person would receive in food. But this is not so and, moreover, it has been asserted that borax is quite innocuous even in large doses. A person may easily take in the course of the day in preservatives used in food large quantities of borax without knowing it. The following list showing the quantities of borax used as a preservative shows the possibilities: milk, 2 grammes per quart; butter, 2 grammes per pound; cream, 1 gramme per pint; oysters, 4·5 grammes per pint; corned beef, 18 grammes per pound; ham, 18 grammes per pound; and sausages, 4 grammes per pound. Thus in the day a person might easily take in such food as much as 14 grammes of borax.

THE WORK OF THE RED CROSS SOCIETY.

A SOMEWHAT lengthy but none the less interesting review, by Dr. E. Laval, of the work of the Red Cross Society appears in the numbers of the *Revue Scientifique* dated August 27th and Sept. 3rd, under the title of "La Croix Rouge en France." The purpose of the articles is to urge upon the people of France the need for extending the operations of those associations which represent the society so that the cause of humanity may be served as well in times of peace as during war. As showing how large is the field open to the efforts of the beneficent a comparison is instituted with other European countries from which we learn how varied are the activities of the different bodies which originated as a result of the Geneva Convention of 1864 and the primary object of which was the relief of the distresses incidental to resort to arms. In Germany the Red Cross Society assists in the management of the "Unfall-Stationen," or stations for the care of the victims of accidents, and at these stations the members of the Patriotic Union of Women, a branch of the Red Cross Society, receive training. Against tuberculosis the society has fought by: (1) promoting the building of sanatoriums; (2) looking after those dependent on the invalid during his stay in the sanatorium; (3) helping those discharged from sanatoriums to obtain employment; and (4) seeking out early cases of pulmonary tuberculosis and urging upon them the necessity of treatment while there is a good prospect of recovery. Further, the German branch of the society, carrying out the idea of our fresh-air funds and similar institutions, provides in the woods near Berlin rest-houses, or "Erholungsstatten," where sick persons, to whom special facilities are given for the journey, may spend the day under the supervision of some competent person. In Austria the society has done its best to check the spread of epidemic disease, as, for instance, by the provision in 1899 at Landskron (Prague) and Jadendorf (in Silesia) of accommodation and medical care for those suffering from typhus fever. The Spanish branch devotes itself to State hygiene—e.g., combating approaching epidemics by encouraging disinfection—and it has also on occasion brought succour to sufferers from floods and fires. One of the features of the work of the society in Switzerland is the establishment of an employment bureau for nurses, while in Italy the society has done much to check the mortality from malaria by founding in 1901 six ambulance corps to transfer cases from the malarial regions to the hospitals in Rome. Japan in 1883 took up the matter with characteristic thoroughness and its Red Cross has now 600,000 followers who come to the help of those affected by all public calamities whether earthquakes, floods, shipwrecks, railway accidents, or epidemic diseases. France with its colonies has a population of about 75,000,000 but only 120,000 persons among these display a practical interest in the humanitarian schemes of the three bodies which, without really constituting branches of the Red Cross Society, carry on its work. These bodies are (1) the Société de Secours aux Blessés des Armées, founded about 1864, the utility of which has been greatly impaired by internal dissensions; (2) the Association des Dames Françaises, which was established in 1879 and from which split off in 1881 (3) the Union des Femmes de France. Dr. Laval's paper is an earnest appeal to these different agencies to sink their jealousies for the common good and to combine in the construction of a charitable organisation which shall remove the reproach of selfish indifference to the woes of their fellows from the wealthier classes in France.

THE APPRECIATION OF NOTHING

IN the Middle Ages philosophers were acutely divided on the question as to whether things were really things or only names—that is to say, whether they were something or nothing—and the late Lord Iddesleigh when Sir Stafford Northcote once held a village audience in wrapt attention while he delivered a lecture "On Nothing." The conception of nothing is as difficult for the finite mind as is that of infinite space and perhaps of all the arts the one best adapted to express nothing is the highest of the fine arts—namely, music. During the present season of concerts at the Queen's Hall Mr. Wood and his magnificent band have given voice to the thoughts of three composers who in two cases purposely, and in one case apparently, have striven to represent nothing. The apparent case was a composition by M. Claude Debussy, a leader in the most modern French school of composition. His "Après midi d'un Faune" goes as near to the audible expression of a day-dream as anything audible can, although what a faun, which is not a gazelle, as the critic of a contemporary believes, does think about we should say that no one knows. Of the other two pieces that by Sir Edward Elgar is founded upon a passage of Lamb which occurs in the essay, "Dream Children," and which runs: "We are not of Alice, nor of thee, nor are we children at all. . . . We are nothing; less than nothing, and dreams. We are only what might have been." The third piece is the amazing scherzo movement from the Fourth Symphony by Tchaikowski of which the composer gives his own interpretation thus: "In the third movement no definite feelings find expression. These are but capricious arabesques. One thinks of nothing. . . . These are the incoherent pictures which float before the fancy divorced from reality." Anyone who hears this movement will recognise with what truth the composer has succeeded in representing nothing, especially in that part of the movement which is allotted to the pizzicato strings. Music, to those who know how to hear, brings home the higher activities of mentality better than any other medium and the psychologist and the thinker may find that abstractions become clear when presented to their minds by the joint art of composers, instrumentalists, and a conductor of such quality as are to be found at Queen's Hall.

THE NEW DIRECTOR-GENERAL OF THE MEDICAL DEPARTMENT OF THE NAVY.

THE Admiralty has issued the following notice:—"Inspector General of Hospitals and Fleets Herbert MacKay Ellis has been appointed Director General of the Medical Department of the Navy in the place of Sir Henry F. Norbury, K.C.B., R.N., whose term of office has expired. To date the 12th September, 1904." The new Director-General served with the battalion of Royal Marine Artillery throughout the campaign in Egypt in 1882, being present at the two engagements at Kassassin and at the battle of Tel el-Kebir. He was mentioned in despatches, promoted to the rank of staff surgeon, and was awarded the medal with Tel el-Kebir clasp and the Khedive's bronze star. He was fleet surgeon of the *Victoria* when she was rammed by the *Camperdown* off Tripoli in June, 1893. His last appointment was that of inspector general in charge of Haslar Hospital. We consider that the Royal Navy Medical Service is to be much congratulated upon this new appointment.

RECOVERY FROM MALIGNANT ENDOCARDITIS.

THE following case, reported in the *Boston Medical and Surgical Journal* of July 28th by Dr. C. F. Withington, is of interest both because of the rarity of gonorrhœal endocarditis and because it is an example of recovery from malignant endocarditis—the possibility of which has been questioned. A man, aged 26 years, was admitted to hospital on April 19th, 1904. A first attack of gonorrhœa began on March 8th. Two weeks later he had measles. During convalescence from the latter disease he was seized with severe pain in the region of the heart and dyspnœa which lasted for four hours. Chills, irregular fever, sweating, and cough followed and persisted up to the time of admission. Four days before admission he had pain in the left leg which rapidly swelled and turned purple. On admission he looked very ill. The temperature ranged from 102° to 103° F. and the pulse from 160 to 170 and there was orthopnœa. Cardiac dulness extended three centimetres to the right and 16 centimetres to the left of the middle line. A presystolic thrill was felt below the nipple but no murmur was heard at the apex. A short systolic murmur was heard in the left fourth intercostal space. There was "gallop rhythm." At the bases of the lungs were limited areas of consolidation. There was marked phlebitis of the left leg throughout. The left calf measured three inches more than its fellow and the thigh was only a little less swollen. There was marked tenderness over the popliteal and femoral veins. A leucocytosis of 16,200 was present. During the next few days the action of the heart grew less tumultuous, the murmur became more distinct, and the pulmonary second sound increased. The temperature ranged between 101° and 103°. Blood taken from the bend of the elbow on April 25th yielded a culture of the gonococcus, confirming the view that the endocarditis was gonorrhœal. The temperature became normal on the 28th and two days later the phlebitis was less distinct. On May 8th the murmur was still present but there were no other cardiac symptoms and the area of cardiac dulness was diminished. Early in June the patient was in fair health the murmur was still heard but the areas of pulmonary consolidation, which were thought to be embolic, were nearly resolved.

THE AMBULANCE IN CIVIL LIFE.

A *brochure* on "Ambulance in Civil Life" is again published as a sixth edition of the address delivered in 1881 by Mr. Reginald Harrison as President of the Liverpool Medical Institution. The present issue, however, contains an account of the efforts that are being made by the Metropolitan Street Ambulance Association to secure for the County and City of London an improved ambulance service. To this end we wish it every success and hope that what was suggested many years back by the Hon. Francis D. Leigh in the *Nineteenth Century* and by Mr. S. Osborn of the St. John Ambulance Brigade will eventually be realised. Without entering into prolonged details of what has been done and what is required great credit should be given to Sir John Furley who was the first to organise any work of this description in the streets of London. The Metropolitan Corps of the St. John Ambulance Brigade with its able body of volunteer workers was started 25 years ago and the present chief surgeon, Mr. S. Osborn, with Mr. J. Brasier and Mr. W. H. Morgan, who then assisted Sir John Furley in his first efforts, still continue to render good service in the streets on all public occasions, and with them must rest the honour of being the first workers in a cause which we should like to see perfected for constant service by incorporation with some such body as the Metropolitan Fire Brigade. Of course this would mean the supplementing of that admirable body of workers by a sufficient number of men, horses, and ambulances to deal efficiently with the task, but this scheme has already been fully considered by the Metropolitan Street Ambulance Association.[1]

ACETONURIA AND DEATH AFTER ANÆSTHESIA.

IN the *Boston Medical and Surgical Journal* of July 7th Dr. E. G. Brackett, Dr. J. S. Stone, and Dr. H. C. Low have reported a series of cases observed at the Children's Hospital, Boston, in which death occurred in peculiar circumstances. On Oct. 6th, 1903, a boy, aged 10 years, suffering from infantile paralysis but otherwise apparently well, was admitted. Four days later he began to vomit persistently light green fluid. The bowels had acted freely and the abdomen was soft and not distended. The pulse became very weak and rose to from 90 to 150 and the temperature rose to 105·8° F. He became unconscious and died 20 hours after the onset of the symptoms. On the same day a girl, aged eight years, was admitted also suffering from infantile paralysis. She seemed delicate but otherwise was sound in health. Several times in the preceding year she had had attacks of persistent vomiting with collapse. Four days after admission three tendon transplantations were done under ether. The operations occupied one and a half hours and were not severe or attended by hæmorrhage. The child took the ether badly and during the operation had a rapid pulse. 12 hours after recovering from the anæsthetic she seemed in fair condition. Then she suddenly began to vomit persistently. The pulse became weak and rose to 190 and the temperature rose to 106°. The vomiting lasted about 30 hours. She gradually sank into a delirious stupor and died 42 hours after operation. Six weeks later, on Nov. 17th, a girl, aged five and a half years, with extensive infantile paralysis had the fascia on the upper and outer part of both thighs divided. She recovered well and was comfortable up to 13 hours after the operation. Then she began to vomit. 24 hours after operation the face became cyanotic, the extremities cold, the pulse weak and rapid, and the expression anxious. She gradually became comatose and died 48 hours after operation. A peculiar sweet odour from the breath led to examination of the urine for acetone and diacetic acid which were found. On Dec. 17th two girls with extensive infantile paralysis, aged six and eight years respectively, were admitted. One began to vomit after six hours and the other after 15 hours. Both became stupid; there was an odour of acetone from the breath and the urine contained acetone and diacetic acid. Both recovered. On Dec. 26th a girl, aged four years, was admitted. For six days she had been vomiting and the bowels had not acted. The odour of acetone in the breath was very strong and acetone was found in the urine. Intestinal obstruction caused by a Meckel's diverticulum was relieved by operation. After recovering from the operation she became unconscious and died at the end of 26 hours. Subsequently a sweet odour from the breath was noticed in a number of patients after operation and acetone was found in the urine. In most of them vomiting occurred and some of them showed marked prostration. Only one case was fatal. In the fatal cases the necropsies showed some fatty degeneration of the liver, kidneys, and muscles. Death after anæsthesia with acetonuria has been previously recognised. In 1894 Becker reported from the Bonn clinic three fatal cases after operation on diabetic subjects whose condition previously had not caused any apprehension. Brewer in the *Annals of Surgery* for October, 1902, reported a fatal case of acetonuria after operation for appendicitis. In THE LANCET of July 4th, 1903, p. 10, Dr. L. G. Guthrie published an article entitled "The Fatal Effects of Chloroform on Children Suffering from a Peculiar Condition of Fatty Liver." The symptoms resembled those of the cases described above. He thought that death was due to auto-intoxication brought about by three factors—the fatty condition of the liver, the shock of the operation, and the chloroform. The phenomena of acid auto-intoxication apart from diabetes has been studied by von Jaksch, Lorenz, Baginsky, and others. Becker found that after anæsthesia in healthy persons a distinct amount of acetone was present in the urine. But in one of the fatal cases now reported and in some of the milder ones the symptoms occurred without operation or anæsthesia. Perhaps the effects on the nervous system of admission to hospital—home-sickness, dread of operation, and so on—may have affected the metabolism and produced acetonuria. In addition to stimulants, bicarbonate of soda was given to combat the acid intoxication and seemed to have a beneficial effect. Very little is known of acid intoxication and the whole subject, as well as its relation to the administration of chloroform, obviously requires further investigation.

THE ACTION OF RADIUM ON FROGS AND MICE.

Dr. E. C. London of St. Petersburg, whose early experiments with radium are well known, has, according to the *Pharmatzevtitcheski Journal*, published a work giving details of his latest investigations, having as their object the elucidation of the action of radium on animal life. One of them was as follows. A solution of radium bromide was placed in a retort connected by tubing with another glass vessel, both of them being stoppered. In the second reservoir he kept live animals, generally frogs or mice, which were preserved from suffocation during the experiments by means of the periodical admission of fresh air. It was found that frogs placed in a vessel with water in which radium emanations were diffused became flabby and dull; in six or seven days their breathing became troubled and their skin showed want of freshness. These symptoms became more and more accentuated up to the thirteenth or fourteenth day, when the animals died. Flakes from their skin floated in the water. On being taken out their skin was found partially to be decomposed and the blood was abnormally dark in colour. Moreover, from the first day of contact with the radium emanations the frogs became radio-active. Mice died sooner than frogs; after being left for four hours in the vessel where radium emanations had accumulated for 48 hours previously they sickened and died on the third day although showing no signs of illness previously. Dr. London supposes that they died from an affection of the air passages induced by the action of the radium.

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[1] THE LANCET, May 14th, 1904, p. 1365.

SEEGEN PRIZE

A PRIZE under the above title of 6000 kronen (£240) has been offered by the Vienna Academy of Science for an essay on the following subject: "To settle the question whether or not a portion of the nitrogen of the albumin which has undergone metabolism in the system is excreted in the form of free gaseous nitrogen either by the lungs or through the skin." The essays may be written in the German, French, or English languages and must be sent in to the Chancellor of the University of Vienna before Feb. 1st, 1906.

IDIOPATHIC EPILEPSY IN A CANARY

CASES of idiopathic epilepsy are rare in the lower animals. Nearly all such cases previously reported, especially in the bird, where necropsies have been made have proved to be Jacksonian epilepsy of traumatic origin. In the *Journal of Nervous and Mental Disease* for August a case is reported by Dr. Pierce Clark of New York of idiopathic epilepsy in a canary which presented many features of interest. The bird was a male one year old, from an apparently healthy brood of four. When it came under observation it was the *subject of typical idiopathic attacks of grand mal* with irregular attacks of *petit mal* at intervals of every few days. An attack of *grand mal* was as follows. The bird uttered an epileptic cry and fell backwards from the perch in a stiff general tonic spasm which lasted about 30 seconds. It lay very still on its left side where it had fallen. Then followed a very short clonic spasm during which the head was turned to the left side and the legs were fully extended. After this epileptic convulsion the bird exhibited violent excitement of an automatic (subconscious) character. It flew about the cage and dashed itself against the wires. After a few minutes of this sort of activity it lay quite still in a stage of coma lasting six or seven seconds. "It then began to peep and stagger about the cage, still continuing its automatic purposeless acts, such as treating the seed cup as a water cup and *vice versa* without partaking of the contents of either. After two minutes the attack gradually wore off and the bird acted normally although it appeared somewhat dazed and did not sing for the next few days. Treatment was adopted of giving bromide by adding a 1 per cent. solution of potassium bromide to its drinking water. Much improvement resulted in the next two weeks, the bird again beginning to sing and to act in the normal manner. Symptoms of bromism (apathy and somnolence) appearing, the dose was reduced. During the next four months only weekly attacks of *petit mal* of a very slight character occurred. Unfortunately, owing to accidental omission of the bromide for a fortnight, a violent series of attacks of epilepsy came on with post-convulsive exhaustion paralysis as follows. The bird gave the epileptic cry and fell backwards from the perch as before. Then followed *tonic spasm for 30 seconds with retraction of the legs* and turning of the head to the left. Clonic general spasms followed with extension of the limbs, including the wings, and fine tremors and jerkings of the same. The eyelids were in rapid nictitation and the mandibles were opened and shut rapidly in clonic spasm. The bird then dashed about the cage as previously described, only more furiously; finally it lay exhausted as though dead at the bottom of the cage (stage of coma). The attacks grew worse daily and the bird, soon exhausted by them, was no longer able to mount its perch. The bromide was again given to note the therapeutic effect and improvement followed. For a period of eight days the attacks ceased and the bird gained steadily in strength and was apparently normal once more when one day it was discovered in a peculiar position, standing with its toes outspread and resting partly on its tail. Rapid clonic spasms and a *rhythmical nodding of the head, as well as fibrillary twitchings* of the body generally were noticed. It grew worse and died in a few hours. The necropsy, which was made ten minutes after death, showed an apparently normal brain in every respect, the calvarium being also normal. The epileptic attacks, the post-epileptic exhaustion paralysis, the status epilepticus, and mode of death were in many clinical respects like the same in man.

THE OPERATIVE TREATMENT OF ENTROPION AND TRICHIASIS

THE frequency with which trachoma followed by entropion and trichiasis occurs in Australia has led to numerous operations being devised and practised for the relief of those unfortunate patients who suffer from these troublesome sequelæ of granular lids. The *Ophthalmoscope* for the present month contains an article by Dr. J. W. Barrett and Dr. W. T. Orr, respectively surgeon and assistant surgeon of the Victoria Eye and Ear Hospital in Melbourne, giving an account of a method of operating which they have found to be successful. In the first stage of the operation a long cut is made through the skin of the eyelid down to the tarsus and the skin, subcutaneous tissue, and orbicularis muscle are dissected upwards; gut sutures are then passed through the edge of the skin adjoining the cilia and are secured to the tarsus in its upper portion which effects the eversion of the cilia. The edges of the skin insertion are sutured with horsehair so that the gut sutures are to a great extent buried. If the tarsus is much incurved a V-shaped strip of it may be removed with advantage. *In the second stage an intermarginal* incision is made from the puncture to the outer canthus, the incision passing up into the substance of the lid behind the roots of the cilia which are all included in the anterior flap. This incision joins that made in the first stage in many places but bridges may perhaps be left here and there. It permits of a certain amount of sliding up of the skin carrying the cilia on the tarsus. In the third stage the posterior flap *containing the tarsus is sutured to the lower* lid by gut sutures so that not only are the cilia displaced upwards but the tarsus is temporarily displaced downwards for a period of from two to four days and the gut sutures are then cut. The horsehair sutures joining the edges of the skin are removed a little later, whilst the gut sutures uniting the ciliary border to the tarsus are either allowed to stay in altogether or are removed when loose. The results are said to be excellent.

ON THE FATE OF THE HAIRS IN CICATRICES

IT is a familiar fact that in the process of repair of injuries to the skin, whether produced by traumatic, chemical, or thermal agencies, no regeneration of hair occurs if the hair roots have been completely destroyed. The surface epithelium which in the process of repair spreads over the injured surface no longer possesses a capacity for the formation of hair, like that of the epiblast in embryonic life. Other results are obtained, however, when the hair roots remain in their natural relation with the dermis, even though the epidermis has been destroyed. Some interesting observations are recorded by Dr. Fritz Lebram on these results in a paper published in the *Centralblatt für Allgemeine Pathologie und Pathologische Anatomie* of July 30th, p. 569. In the first place, little islands of epithelium may start out from the hair sheath and spread over the granulating surface, assisting in the process of healing as shown by F. Marchand.[1] Again, if the hair papilla be uninjured the natural process of growth will go on in addition and a scar will result containing hairs as in the normal skin. On the other hand, the process of granulation tissue formation, and regeneration of the surface epithelium may occur rapidly so that the hair root becomes completely shut in. Under these conditions it may atrophy or develop into a cyst or may continue to grow without reaching the surface. Dr. Lebram describes and figures an example of this latter condition which was obtained from the scar of an operation wound in a case of carcinoma of the breast. In the section a hair is seen cut across in the depth of the scar six times, its apex growing into the deeper parts and not towards the surface. The hair is surrounded by a number of giant cells, having apparently acted as an irritant to the surrounding tissues.

SANITARY MATTERS IN MANCHESTER.

THE report of the Manchester sanitary committee, with its annual record of work up to the end of April last, shows how much the public health depends on the efficiency of the department. From all quarters 47,200 complaints were received by the committee. It is often said, and with a good deal of truth, that the public is apathetic, but they made 2125 of the complaints, while through the medical officer of health's department 27,104 were made, 95 by the police, and 17,876 by the staff. Inspections of registered lodging-houses, of which there are 896, are frequently made. 3996 visits were paid by day and 591 at night. A large number of these houses are not registered and a special inspector has been appointed to look after them. A careful watch is kept over the milk-supply but there are great difficulties in the efficient carrying out of the precautions against the introduction of disease. The need for redoubled care is shown by the increase in the proportion of the various milks taken at the railway stations proved to be tuberculous. It is encouraging, however, to note "that the death-rate from phthisis is much the lowest on record." With regard to small-pox we seem to be becoming resigned to its existence among us, now increasing and again diminishing, the origin often clear, but in other cases eluding all search. This fatalistic attitude is to be deplored. Dr. J. Niven, of course, approves of vaccination and considers that revaccination at the age of 12 years is the essential object to be attained. "If compulsory revaccination at the age of 12 can be brought into operation all difficulties about small-pox hospitals, vaccination of contacts, isolation of families, and so forth, will dwindle to trifling magnitude." In his address to the Sanitary Inspectors' Association at Southport on Sept. 3rd Mr. F. Vacher, the President, medical officer to the Cheshire county council, urged that conscientious objection to vaccination should not be legally recognised and that revaccination should be compulsory. He would remove the oversight of vaccination from the guardians to the sanitary authority. He would have chicken-pox added to the list of diseases compulsorily notifiable and the control of the movements of the vagrant class given to the local authorities. It is pretty certain, however, that the ancient effigy of "the liberty of the subject" would be brought out again, for our theory seems to be that the ignorance or fanaticism of the few shall always be allowed to inconvenience and to endanger the many.

WE regret to announce the death so soon after his retirement in May, 1901, of Surgeon-General James Jameson, C.B., who died at his residence in Eltham, Kent, on Tuesday last, aged 67 years. He was appointed Director-General of the Army Medical Service in 1896 and his retirement was announced in THE LANCET of June 8th, 1901. In a future issue we hope to give an extended account of his career.

THE first congress of the Société Internationale de Chirurgie will be held in Brussels in September, 1905, under the presidency of Professor T. Kocher of Berne. All communications regarding the congress should be addressed until further notice to Dr. C. Willems, delegate for Belgium, 6, Place St. Michel, Ghent.

WE regret to announce the death of Dr. William Lee Dickinson which took place quite suddenly on Sept. 6th at Tintagel, Cornwall. We shall publish an obituary notice in a future issue.

THE EVOLUTION OF MAN'S DIET.

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II.[1]

FOOD AVAILABLE FOR THE EVOLVING MAN.

I PROPOSE now to consider the various diet epochs but before doing so it will be well to take a brief survey of the kind of food, animal as well as vegetable, which was available for the evolving man before he had learnt to increase his food-supply by artificial means—i.e., by cultivating plants and breeding animals.

Vegetable Food.

Seeds.—Seeds constituted the most important sources of the vegetable food of man. Containing as they do an embryo plant, together with a supply of nutriment for it, these are of all vegetable foods the most nourishing, inasmuch as besides starch and fat they are provided with a large proportion of the precious proteid which is absolutely necessary for the upbuilding of animal protoplasm. Some, like the grass seeds, are very small and require to be collected in large quantities before they afford an appreciable amount of nutriment, while others, such as acorns, chestnuts, and the seeds of many pines, palms, and leguminous plants, may individually yield a goodly store.

Fruits.—When, as in the case of the sloe, wild apple, and various species of "berries," seeds are enveloped in a brightly coloured and often luscious envelope which subserves the purpose of their distribution by attracting birds, they and their envelopes constitute "fruits." It should be noted, however, that these fleshy envelopes are in the case of all wild fruits, of comparatively little energy value, consisting as they do in the ripe state mainly of a watery solution of sugars and salts; and as the seeds of fruits are specially constructed to resist digestion so as to pass whole through the alimentary canal, being, in fact, quite undigestible unless laboriously masticated, it is obvious that wild fruits do not afford much nutriment. If, however, they are ground or otherwise specially treated the seeds of some fruits—e.g., of the wild water-melon—may be rendered highly nutritious.

A secondary source of the primitive food-supply lay in fleshy roots and green vegetables.

The fleshy roots.—The term "fleshy root" may conveniently be made to include any underground part of a plant (e.g., tuber, rhizome, tap-root) serving as a store-house of nourishment. Such "roots" are of food value chiefly on account of their richness in starch; they contain but a small quantity of proteid and thus can only serve—and this is true even of the cultivated varieties—as accessories to the more nitrogenous foods

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[1] Deutsche Chirurgie, Lieferung 16, S. 167.

[1] No. I. was published in THE LANCET of Sept. 10th, p. 781.

Green vegetables —Under this term we include the leaves and young shoots of plants, they afford very little nourishment and are chiefly eaten for the watery and saline constituents they contain

Besides all these—seeds, fruits, roots, and green vegetables—among the miscellaneous vegetable substances available as food for the evolving man were *mushrooms*, *seaweed*, the *bark* of certain trees, and *gum*

Contrasting the uncultivated vegetable foods with the corresponding cultivated varieties we find that the former differ from the latter chiefly in containing a larger proportion and denser kind of cellulose, and in being less palatable owing to the presence of bitter and acrid principles, the chief objects aimed at in the cultivation of vegetable foods having been to diminish the cellulose and the disagreeable ingredients and to increase the proportion of starch, sugar, proteids, and fats Other things being equal those vegetable foods which contain the least amount of cellulose and the least dense varieties of it, and the smallest amount of bitter or acrid constituents, are the most nutritive and palatable and therefore the most eagerly sought after This is an important principle as it explains how the evolving man gradually came to leave certain vegetable foods out of his dietary

Another point regarding uncultivated vegetable foods on which it is necessary to insist is that they are by themselves totally inadequate to supply man's nutritive needs Even our anthropoid and post anthropoid or homo simian ancestors could not subsist entirely on the vegetable food which nature provided for them One is apt to picture early man as surrounded by luscious fruits and sweet tasting seeds in profusion, as living [illegible] , where a sufficiency of [illegible] e mere trouble of gatherin [illegible] as is sufficiently proved by the fact that even now in spite of their elaborate methods of preparing and thus increasing the nutritive value of their vegetable food, no existing race of men is capable of subsisting upon the products of the uncultivated vegetable kingdom alone The popular belief to the contrary is perhaps in some measure due to the mistaken notion that fruits like the fig, date, and banana grow wild in abundance and constitute even in their wild state highly nutritious foods, whereas, as a matter of fact, they are, as supplied to our markets, the finished products of a cultivation the origin of which is lost in an unfathomable past, while in the wild state they are scarcely recognisable and practically inedible The sugar cane and cocoa nut have similarly been brought to their present state of perfection by centuries of careful cultivation, wild, they furnish but a meagre supply of nutriment

Animal Food

As for the animal food of evolving man it may safely be said that animal food in any or every form was acceptable to him and his homo simian ancestors prior to the cibicultural period Some kinds would naturally be preferred before others, but there can be no doubt that, at any rate in times of dearth, all kinds were greedily devoured, from fish, birds, and birds eggs, and every species of mammal, down to grubs, worms snails, insects, caterpillars, frogs, lizards, snakes and shellfish

Nor among his available foods must we forget to include *honey*, which has afforded a valuable source of nutriment from anthropoid times

THE DIET EPOCHS

In considering the changes which this primitive diet has undergone we shall find it convenient to divide man's dietetic career into epochs and periods The following are those which I propose[2] —

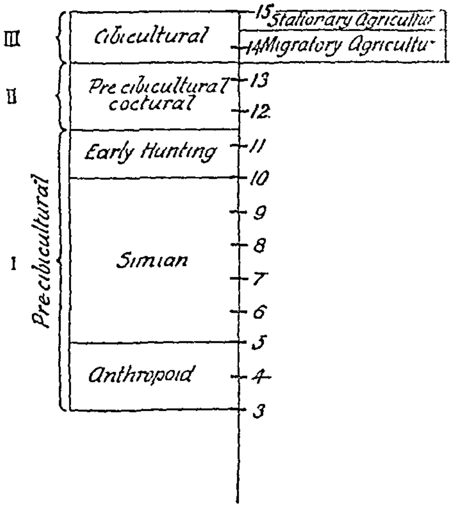
I *The pre coctural epoch* —From the anthropoid stage to the discovery of cookery (3rd 11 5th grade)
- The anthropoid period (3rd–5th grade)
- The homo-simian period (5th 10th grade)
- The early hunting period (10th–11 5th grade),

I [illegible] *epoch* —From the discovery of [illegible] griculture and the breeding of [illegible]

III *The cibicultural* [illegible] age of pap [illegible] grade)

The first, or pre coctural epoch, extends from anthropoid times to the definite establishment of cookery, which I place at the 11 5th grade of evolution (see Fig 3) This epoch

FIG 3



may be conveniently subdivided into three sub-epochs or periods (*a*) The anthropoid period (corresponding to 3rd 5th grade of evolution), (*b*) the homo-simian or, more briefly, the 'simian' period (corresponding to the 5th–10th grade), extending from the anthropoid stage until the time when artificial methods were first employed in hunting and fishing—when, i e , we may suppose racial manhood to have been attained , and (*c*) the early, or pre coctural, hunting period (corresponding to the 10th–11 5th grade), which embraces the period of hunting and fishing before man had begun to cook his food habitually

The second, or coct [illegible] xtends from the commencement [illegible] ce till man began to increase [illegible] plants and breeding animals, and corresponds I suggest, to the 11 5th–13 5th grade of evolution All existing pre-agriculturists are in this diet epoch

The third or cibicultural, epoch, which includes the present time dates from the time man began to cultivate plants and breed animals for food which I assume to have been at the 13 5th grade of evolution So far as agriculture is concerned this period admits of subdivision into (*a*) the period of migratory agriculture and (*b*) the period of stationary agriculture, which may be further divided into an early and a late period, the latter being characterised by the fact that most of the farinaceous food is consumed in a soft, pappy state, for which reason it may not inappropriately be called the "age of pap "

It may, perhaps, appear more accurate to speak of diet *stages* rather than *epochs*, inasmuch as the various peoples of the world have not advanced at equal rates in regard to their diet any more than they have in other respects There has, i e , been a considerable overlapping of the [illegible] [illegible] *wever, we agree to take as the beginning of* [illegible] time at which the dietetic customs characteristic of it first began the term "diet epoch" will have a definite chronological meaning.

It is, of course, impossible to state with any degree of exactness the dates of these various diet epochs and periods and the evolution grades to which they severally correspond, to say, e.g., how many years ago the hunting stage began and what evolution grade had then been reached. I have had to surmise much and doubtless many of my surmises are wide of the mark—thus it is not unlikely that the coctural epoch started before the 11·5th grade—but they may help to give clearness and definition to the otherwise blurred picture of man's dietetic evolution and their conjectural character may perhaps serve to stimulate inquiry.

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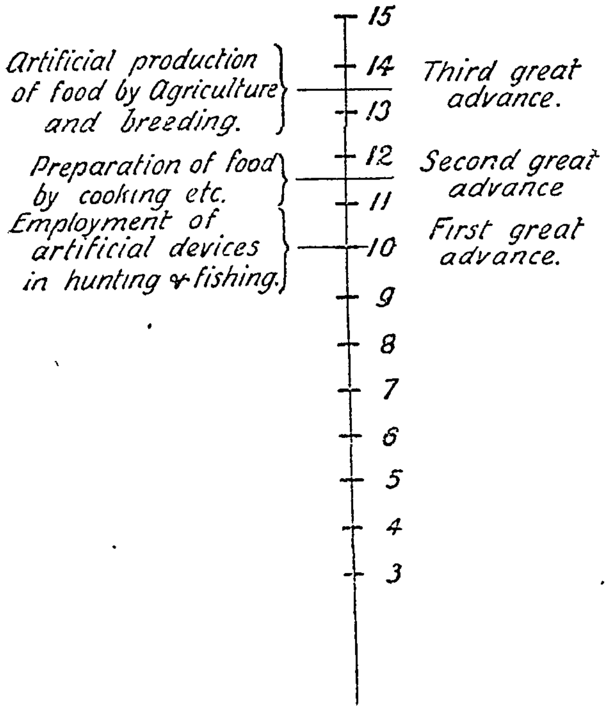
[2] A word as to nomenclature Nothing better shows the neglect hitherto of our present line of inquiry than th [illegible] ready made [illegible] "cooking" [illegible] is employe [illegible] denote both [illegible] derive coctu [illegible] *cibi* in cibic[illegible] formed by taking the genitive of cibus on the same principle as *pisc* and *horti* in piscicultural and horticultural, the *s* of piscis in the former case being omitted for euphony

Taking, now, a general survey it will be seen that the dietetic career of the evolving man from homo-simian times onwards has been characterised by three great advances, with each of which his supply of food has been greatly augmented. (Fig. 4.) The first advance was made when the genuine hunting and fishing stage was entered upon, when man began, i.e., to employ artificial aids in capturing his animal food, and thus came greatly to increase its supply and to be correspondingly less dependent upon vegetable food: until he had invented these he must have been unable, except by lucky chance, to procure any of the larger game and only a very limited quantity of fish. The second advance came when he began to subject his vegetable food to artificial preparation, such as sun-drying, grinding, maceration, burying, and, above all, cookery; this led to a considerable increase in his supply of vegetable food and opened the way to agriculture. The third great advance—preceded by the minor one which was made when he learnt to store his food, especially vegetable food, against seasons of dearth—consisted in the cultivation of plants and the breeding of animals for food; once he had fairly reached this step man in one bound increased his food-supply a thousandfold and was enabled to multiply and progress in a manner which had otherwise been quite impossible.

FIG. 4.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Artificial production of food by Agriculture and breeding.
Third great advance.
Preparation of food by cooking etc.
Second great advance
Employment of artificial devices in hunting & fishing.
First great advance.

We will now briefly consider each diet epoch in its leading features, leaving their more complete consideration to future sections.

The anthropoid period.—During this period (3rd to 5th grade) our precursors resembled the present-day anthropoids and probably subsisted on much the same kind of diet as do the latter—i.e., on seeds and fruits, leaves and young shoots, and possibly also roots; and on such animal food as insects, grubs, caterpillars, frogs, lizards, snakes, birds, birds' eggs, and the smaller mammals; honey and gum were probably also consumed. Much of the vegetable food of this period was, by reason of the density and abundance of its cellulose constituents and its admixture with acrid and bitter principles, of a kind quite unsuitable to the needs of the evolving man in his coming phases.

The homo-simian period.—The next long period (5th to 10th grade) saw the simian pre-human struggle upwards from ape to man. He gradually spread over the Indo-African continent, leading, we may conjecture, a comparatively stationary, non-nomadic life, and subsisting chiefly upon raw vegetable food. As his intelligence increased, however, and with it the means of procuring animal food, he became less and less a vegetable feeder and more and more carnivorous, though he was not yet able to procure any but the smaller animals. But with this increase in the amount of animal food consumed he naturally came gradually to abandon and to lose the power of digesting the most indigestible and least palatable forms of vegetable food.

The pre-coctural hunting and fishing period.—This period (10th–11·5th grade) began when the evolving being first learnt to hunt and to fish in real earnest. This he could not do without the help of special weapons and devices: without weapons, traps, or dogs, how was it possible for him to destroy the larger game? He could not, like the carnivora, overcome his prey by sheer agility and strength; with man success in the hunt depends essentially upon intelligence, upon an intimate knowledge of the habits of his prey, and cunning in devising means of trapping, spearing, shooting, or otherwise overcoming it. How, again, without special devices, was it possible for him to secure any but small quantities of fish? While, therefore, there can be no doubt that the diet during the homo-simian period became increasingly animalised, it was not till the hunting and fishing period was fairly reached that the evolving being whom we may now suppose to have attained to the dignity of manhood—the invention of hunting implements surely constitutes a title to this distinction—became actually more carnivorous than vegetarian, and this in the proportion, I should judge, of about three to one. The effect of this large accession of animal food was to lead to a further abandonment of the least suitable kinds of vegetable food, with a corresponding loss in the power to digest them in the raw state. Another effect was that it enabled man to spread into regions which without hunting would not have provided him with sufficient food: we may, in fact, date the spread of man far and wide over the earth from the beginning of the hunting period, though it is quite possible that the general dispersal did not take place until man had learnt to prepare his vegetable food artificially and in this way greatly to increase its supply.

It should be observed in regard to these three pre-coctural periods—the anthropoid, homo-simian, and early hunting—that all the vegetable foods (save the luscious fruits which contain their saccharides in a soluble form) need very efficient mastication in order to break up their undigestible[3] cellulose framework and thus to liberate the contained starch, proteid, and fat. It is therefore evident that throughout these periods the masticatory apparatus of our early progenitors must have been put to ample work. The effect on the starchy portion of food of thorough mastication is worthy of note: it leads to its very thorough insalivation; and inasmuch as the intake of starch in those far-off times was comparatively limited this substance was for the most part digested into dextrines and maltose within the mouth, but little passing into the stomach as crude starch. It will thus be seen that until the discovery of cookery the stomach of the evolving man had very slight acquaintance with undigested starch, saccharide material entering it for the most part in the soluble form, either as grape sugar and fruit sugar, together with a small quantity of cane sugar (as in honey and luscious fruits) or as the products of salivary digestion—i.e., as dextrines and maltose.

The pre-agricultural coctural period (the 11·5th–13th grade).—It is very probable that food was cooked in a desultory way long before this, for there is evidence of fire having been employed artificially in the miocene period.

We are happily able to give an accurate and not merely conjectural account of the dietetic features of this period, since certain peoples are living in it at the present day. I shall in due course give reasons for concluding that man first applied cookery to vegetable rather than animal food; in any case the importance of the discovery of cookery relates almost entirely to its effect on vegetable food. It does not seem improbable that before man learned to cook his vegetable food as a matter of routine he had already begun to prepare it *in other ways, as* by sun-drying, grinding, and burying, by which means its digestibility may in many cases be increased, and by maceration whereby poisonous and acrid ingredients may be got rid of. When he learnt to prepare his vegetable food in these various ways, but esp[illegible] to cook it systematically, h[illegible] for there are many highly [illegible] *which in the unprepared stat*[illegible] amount of dense cellulose they contain or their admixture with obnoxious principles, are of little or no value to him as food, but which by cooking and other means can be converted into valuable nutriment. Hence, with the advance in the art of cookery—and it is suprising to what refinement it had attained in the latter part of this period—the supply of vegetable food steadily increased, and the hunter was to some extent relieved from the chase and more free to devote himself to other pursuits. This increase continued throughout the period under consideration until vegetable food came to constitute one half, or more, of the total dietary.

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[3] The term "undigestible" is used as distinct from "indigestible."

The chief effect of cooking on vegetable food being the breaking up of its cellulose frame-work and the liberation of the contained nutritive ingredients, cooking greatly aids the digestibility of all such vegetable substances as contain abundance of cellulose and at the same time it relieves the organs of mastication of much of their work; hence when man began to cook his vegetable foods he subjected them to *less mastication than heretofore*, with the consequence that the starchy ingredients were so much the less insalivated, and inasmuch as with the advent of the coctural period more starch was consumed than previously, it is clear that more of it now entered the stomach than had hitherto been the case.

The abandoning of, and the corresponding loss of power to digest in the raw state, the less digestible and palatable kinds of vegetable food which characterised the homosimian and early hunting periods went on with accelerated rate after man had once begun to subject his food to artificial preparation, until he came to depend less and less upon raw vegetable food and finally limited himself to the very easily digestible kinds.

A still more important effect of cookery was that it led the way to the next great dietetic advance—i.e., the artificial production of food by the cultivation of plants and the breeding of animals, without which a high degree of civilisation would scarcely have been possible. It is, no doubt, conceivable that man might have come to breed animals for food without having first discovered cookery, though that he would have done so to any great extent seems unlikely; but that agriculture would not have made great headway without cookery is certain, since much the most important objects of agriculture—i.e., the cereals and pulses, *as well as most roots*—need cooking. *Most cultivated fruits*, and some of them of high nutritive value, such as the fig, *date, and banana*, do n[illegible] the highly nutritive su[illegible] foods, it is at least dou[illegible] could be attained by a [illegible] for its chief supply of vegetable food. They all contain an abundance of soluble saccharide, but, with the exception of the banana, are very poor in that most precious of all nutritive ingredients, proteid. Certainly no community, as Payne has shown, has ever attained to any high degree of civilisation which has not cultivated the richly nitrogenous cereals, and these there can be no doubt would never have been cultivated, any more than would the highly nitrogenous pulses which might conceivably have taken their place, had *man remained ignorant of* the art of cookery.

The cibicultural epoch began, say, some 80,000 years ago. One of the first [illegible] food culture was the [illegible] seasons of dearth; a sec[illegible] of plants valuable as food. Both these agricultural foreshadowings are to be observed among the aboriginal Australian pre-agriculturists. Thus they store the bunya-bunya seeds in baskets underground and they have a practice of apportioning to certain families a certain number of the bunya trees which pass on as hereditary property to their children. Man had also learnt to preserve and store animal food—e.g., by drying and smoking—long before he began to breed animals for food. As to whether he cultivated plants or bred animals first is a question we need not discuss just now. In the New World he certainly cultivated plants first. In any case a great forward step was taken when man began to produce food artificially, *when instead of having to search laboriously for fruits*, roots, and seeds he took to cultivating them ready to his hand. He cultivated groves of cocoanut, fig, and date trees, and improved their fruits out of all recognition; he planted large fields of roots, such as the manioc, potato, and yam, and greatly increased their stores of nutriment; and instead of depending for his cereals upon the small seeds of wild grasses collected with infinite labour he diligently tended and promoted their growth and thus developed the noble maize, and still more noble wheat, of which he has eventually come to grow millions of acres. And in regard to the animal kingdom, not only did he learn in the course of time to increase his supply of fish by building vast fleets of fishing vessels to reap the illimitable harvest of the sea, but also in place of spending long hours in the hunt, which at best could yield but a very limited supply of animal food, he learnt to raise on his own account vast flocks and herds of oxen, sheep, goats, and pigs and to breed birds of many varieties. Yet the total effect of food culture has been to make man more vegetarian than carnivorous, inasmuch as the supply of vegetable food has been increased more than that of animal food.

So far as agriculture is concerned the period under consideration falls into two sub-periods: (1) the period of migratory agriculture, in which limited patches of virgin soil were planted and quickly abandoned for new ones; and (2) the period of stationary agriculture, when the ground was carefully tilled, broken up, manured, rolled, and irrigated. During the migratory stage, especially in its earlier part, man still remained a hunter, combining hunting and fishing with desultory agriculture. It is important to distinguish between these two periods, for so long as the human community was wandering and occupied almost entirely with the food quest substantial progress in culture was not possible. It was only when agriculture had become stationary—say some 30,000 years ago—and an abundance of highly nutritious vegetable food and in some cases artificially reared animal food also[4] had been secured by the labour of a limited section of the community, it was only when in this way a large amount of the total energy of the community was liberated and made available for other purposes than the food quest that a complex division of labour became possible. Then it was that civilisation began in real earnest and that the ancient glories of Mexico and Peru, Babylon and Egypt rose in the midst of a barbaric world.

Now we have seen that cookery led the way to agriculture and it may therefore, I think, fairly be claimed for it that it opened the road to all the subsequent great discoveries of man and may thus be regarded as one of his greatest.

The power of digesting raw vegetable foods, which had been steadily waning during the previous diet epochs, has still further declined during the agricultural epoch. Uncultivated vegetable foods have now been practically abandoned and, with the exception of the fruits, very few of the cultivated varieties are eaten in the raw state.

Another effect of agriculture has been greatly to increase the amount of crude starch entering the stomach. We have seen that before the discovery of cooking comparatively *little undigested starch passed into this organ and that* cookery by leading to an increase in the amount of starch ingested and by diminishing the work of mastication and consequently the completeness of buccal digestion led to an increase in the quantity of crude starch passing into the stomach. The introduction of agriculture operated still further in the same direction and augmented the supply of starch to an enormous extent. Within recent times, moreover, it has been the fashion to consume most of the starch in a soft, pappy, or pultaceous form, in the form, e.g., of boiled potatoes, refined bread, porridge, and puddings of various kinds, which readily pass into the stomach after little or no preliminary mastication and insalivation; so that in striking contrast with what happened in the case of early man, the modern stomach is literally deluged with crude starch. This practice among moderns of consuming most of their starchy food in a soft form cannot be too strongly condemned.

(To be continued.)

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[4] That the artificial rearing of animals was not needful for the attainment of a high degree of civilisation is proved by the case of the ancient Mexicans.

A CHESHIRE COLONY FOR SANE EPILEPTICS.

ON Sept. 8th Mr. B. W. Levy, the David Lewis legatee, formally handed over to representative trustees the title-deeds of the Sandlebridge Colony for Epileptics, between Alderley Edge and Chilford. Mr. Levy handed the title-deeds to the Lord Mayor of Manchester and in the course of his remarks stated that Lord Egerton had consented to be the president of the institution. When the David Lewis Trust decided to establish the colony the experience of the system in England was of the slightest. He therefore visited some of the continental colonies and was so much impressed that he sent a deputation to visit them. The colony now erected was as complete as it could possibly be, "and the object they had in view had been to evolve a colony which would be an object-lesson and act as a guide to those forming similar institutions." The homes were not intended primarily for the pauper classes for whom the guardians of the poor were responsible. The Lord Mayor of Manchester having received the title-deeds expressed his pleasure as chief magistrate of the city in accepting the gift and said that Mr. Levy could not be thanked too much for what he had done. Sir W. H. Houldsworth, Bart., M.P., one of the trustees, in moving a vote of thanks to the Lord Mayor, also spoke of the munificent generosity of Mr. Levy. at the commencement of the trust he had placed £100,000 in their hands for Manchester and a similar sum for Liverpool. He trusted that the public would take care that the necessary funds were supplied for the proper maintenance of the institution. With the example of the well-considered and generous philanthropy of Mr. Levy before them, we may hope that Manchester will not fall short in the duty and privilege of insuring the success of this noble work.

The history of the colony is as follows. In September, 1892, in a paper read before the North-western Poor-law Conference at Chester, Dr. J. M. Rhodes gave expression to a feeling that no doubt existed in the minds of others that as regards any proper provision for sane epileptics England was remiss in her duty. His experience on the Chorlton board of guardians had shown how unhappy was the lot of the sane epileptic, associating as he had to do with the feeble-minded and insane, without provision for amusement or instruction and with the practical certainty that gradually increasing mental feebleness would reduce him to the level of the poor creatures around him. Happily, Dr. Rhodes's paper aroused public attention and in 1897 members of the Chorlton and Manchester asylums committee, including Dr. Rhodes, visited the chief epileptic colonies on the continent. Shortly afterwards, quite independently of the joint asylums committee, a provisional committee was formed with the view of establishing a colony in the Manchester district. This was not connected with the Poor-law but was an independent voluntary association. This committee collected about £8000 which sum was to be the nucleus of an endowment fund. It has now increased to about £14,000, which amount is, however, much too small, but it will grow, it is hoped, to at least £50,000. Application was next made to the Manchester committee of the David Lewis Trust for a grant from its fund. At first this was refused but after searching inquiry the trustees generously offered to provide land and buildings for the proposed colony, to furnish and to equip it, and to hand it over to the committee ready for occupation. When this decision was come to Mr. B. W. Levy himself, as mentioned above, visited some of the continental institutions and sent, moreover, a small commission of inquiry to visit various continental epileptic colonies. It consisted of Dr. Head, Mr. Alexander Graham, architect, and Mr. Levy's own secretary, and reported to him on the medical, architectural, and general aspects of these institutions. Alderman A. McDougall, Dr. Rhodes, and other members of the provisional committee, with the secretary, Mr. Marshall, also visited similar institutions on the continent and in the United States. "These institutions [in the United States] are surrounded by extensive grounds, with farms, workshops, and all that is required by way of healthy surroundings and internal equipment to secure, as far as possible, successful treatment for the unfortunate sufferers." The trustees after some difficulty acquired the Sandlebridge estate, "suitable as regards soil and surroundings." It may be interesting to know that it belonged to Lord Knutsford, whose father, the late Sir Henry Holland, so well known as a scholarly physician, inherited it from his father who lived greatly respected in Knutsford and had a large general practice extending over a wide area. About 130 acres of this estate are immediately available for the purposes of the colony and further land may be brought into use "should the needs or expansion of the colony require it." As the result of all the various inquiries "it was decided to form a colony on the lines of German establishments, with such adaptations and alterations as English climate and modes of life rendered desirable." The buildings consist of an administration block, three houses for men and three for women, each for 20 or 30 patients, a hospital and administration block, school house, chapel, recreation room, kitchen, laundry, farm buildings, and cottages for work-people, and so on. The total cost of land and buildings, together with the laying out of the grounds, electric and sanitary installations, and furnishing, has been over £100,000 and is expected to reach £120,000. The committee will be able to accommodate in the first instance about 200 patients. There is room now, however, for 250 and the hospital and kitchen have been arranged with the view of the number increasing to 500. During the first few years it is expected that there will be a deficiency of income of from £3000 to £4000 yearly. The patients will contribute to the cost of their maintenance at various rates and in years to come it is hoped that a tangible revenue will be derived from the produce of the farm, gardens, poultry yards, and the like, and this hope seems to be justified by the experience of the American institutions of the same character. The education there is such as will assist the epileptic to gain his daily bread. "We must recognise the fact that the epileptic is a more or less defective being," but "there is no reason why he should be a total burden to the State." "For him labour is a godsend and he should be taught how and where that labour can best be used." And the incurables who must always remain at the colony should be able to enjoy reading and to write home to their friends. Many trades and occupations are taught in these institutions besides farming. Thus in the Craig Colony in New York State there are a printing office, a blacksmith's shop, a carpenter's shop, a sewing room, a tailor's shop, and a shoe shop. It should be noted that six hours a day is the limit of work time. In some such ways will the profitable education at Sandlebridge be conducted. In the United States models, pictures, and the Sloyd system are much used. And in such institutions the quality and capacity of the brain have to be considered.

There can be no question that this epileptic colony will meet a great want in a wide district in an efficient manner and the committee, though it anticipates that the colony will in time be to a certain extent self-supporting, is justified in making an earnest appeal for substantial assistance at the outset of its career of usefulness. As previously stated, an effort is being made to raise an endowment fund of £50,000. Dr. Rhodes would double this, his view being that as the proportion of epileptics to the whole population is 1·5 per 1000 the sum of £100,000 is not too great. It must not be forgotten that there will be substantial gain to the community if the care and protection of the epileptics and feeble-minded are carried out in the country at large. The workhouses will be relieved. At present it appears that the only institutions of this kind in this country are at Maghull, near Liverpool, at Chalfont St. Peter in Buckinghamshire, the Countess of Meath's home at Godalming, and a home for pauper Roman Catholic children at Bishop Stortford. There is room for many more but as the law stands at present they must be left to voluntary effort. The county councils can provide for cases of mental disease, but in the eye of the law epilepsy is not a mental disease and cannot be dealt with till it has merged into insanity and the mischief has become complete and irremediable. How desirable it is that care and treatment should begin early is shown from the fact that the prospect of benefit, and even in some cases of cure, is so much the more likely. But even if incurable the epileptics will live under happier conditions than in the miserable homes from which many of them come. They will be saved from themselves and their own weaknesses and from the deteriorating moral and physical influences of the workhouse ward, where too often the sane and the insane, the virtuous and the vicious, are equally hopeless and equally wretched, A great debt of gratitude is due to the David Lewis trustees for their generous and well considered munificence It is intended to make the Sandlebridge Colony one of the best of its kind and it may be hoped that it will be the precursor of others, to surpass, it in usefulness e trustees —Mr B W Levy, V H Mather, Mr S Levy, Mr H Philips, Mr W J Crossley the Lord Mayor of Manchester, the Mayor of Salford, Sir Frank Forbes Adam, Mr H Agnew, Mr E Tootal Broadhurst Mr E Donner, Mr S L Helm, Councillor J Royle, and Mr G Combes The deed provided that the trustees should never number more than 20 The following form the committee of management —Mr R Armistead Mr E Aston Mr A Crewdson Colonel Dixon Mr James Hall Mr S L Helm, Sir Bosdin F Leech Mr Eliot S Levy, Mr E G Leycester Alderman M Dougall, Mr John Royle, Alderman J Milson Rhodes Mr John Shillito Mr Charles H Scott, and Mr Charles E Thornycroft Mr S L Helm is the treasurer

ASYLUM REPORTS

Warwick County Asylum (*Annual Report for 1903*) —The average number of patients resident during the year was 979 comprising 422 males and 557 females The admissions during the year amounted to 239—viz , 111 males and 128 females Of these, 199 were first admissions Dr Alfred Miller, the medical superintendent, states in his report that dmitted was decidedly state More especially Our infirmary wards have been crowded owing to this fact and the amount of extra diet issued has been far greater than in previous years Intemperance in drink was found to exist in 50 of the admissions The number of cases discharged as recovered during the year amounted to 73—viz 32 males and 41 females, or 7 5 per cent of the average number resident The deaths during the year amounted to 105, or 10 7 per cent , as calculated on the same basis Of the deaths five were due to pneumonia, six each were due to cardiac disease and senile decay, ten to epilepsy, 11 to general paralysis 14 to cerebral hæmorrhage, 17 to pulmonary and other forms of tuberculosis, and the rest to other causes The male *patients have as a rule, enjoyed good health, but on the* female side of the asylum there has been a great deal of illness, including an epidemic of diarrhœa About 60 patients were attacked and of these two died "There has been a good deal of discussion, says Dr Miller, "concerning accommodation for idiot and imbecile children certifiable under the Lunacy Act I am sure that these cases are not suitable for the wards of a county asylum I trust that the asylum authorities in the Midlands will combine for the purpose of providing accommodation for the idiot and imbecile children at present in the wards of the county asylums Personally, I would prefer to see these patients classified and living in small numbers, somewhat on the lines of cottage homes Under these circumstances classification would be an easy matter, and those capable of receiving instruction and deriving benefit from special treatment would thereby obtain the best opportunities for doing so ' A new building for private patients has been recently opened and is expected to prove useful 'for a class of patients for whom practically exists in the country" The been entirely remodelled but the end of the year 1904 it is expected that all the wards in the asylum will be plastered and refloored The Commissioners in Lunacy state in their report that the condition of the patients was satisfactory and that they looked well cared for, that they seemed contented and had no complaints to make, that the wards were bright and well ventilated, and that the medical case books and records were efficiently kept The committee of management states in its report that a contract has been entered into for the enlargement of the asylum in accordance with the plans which have been approved by the council for the sum of £6950

Lanark District Asylum (*Report for the Year ending May 15th, 1904*) —The average number of patients resident during the year was 877, comprising 446 males and 431 females The admissions during the year amounted to 223—viz , 120 males and 103 females Of these 129 were first admissions Dr Neil T Kerr, the medical superintendent, states in his report that the number of private patients admitted during the year was again large "and showed the need that existed of granting to district asylums the privilege of admitting private patients at a low rate of board, as has already been granted to English county asylums There are many people in a good social position who frequently find it difficult to pay the higher rate at a private or royal asylum if the relative s illness is likely to be of long duration ' The condition of many of the patients mental and physical, was very unsatisfactory, "indeed," adds Dr Kerr, 'many were hopeless from the very first ' Eight were admitted over 70 years of age It was a matter of regret that so many patients were certified because of the brain failure that accompanied old age, for the accumulation of such senile cases had much to do with the apparent increase of insanity The admissions also included seven cases of congenital mental deficiency, five cases of epilepsy, 11 of general paralysis, and 24 who had attempted suicide prior to admission Of the causes of insanity hereditary predisposition and alcoholic intemperance were the principal ones The number of patients discharged as recovered during the year amounted to 92—viz 61 males and 31 females—or 10 5 per cent of the average number resident The deaths during the year amounted to 73 or 8 3 per cent as calculated on the same basis Of the deaths one was due to renal disease, five were due to general paralysis six to cerebral hæmorrhage, eight to pulmonary and other forms of tuberculosis, 12 to pneumonia and broncho pneumonia, 19 to cardiac disease, and the rest to other causes During the winter there was much illness chiefly influenza, which affected both patients and officials 'It was the most severe epidemic we have had since the asylum was opened and it caused the death of a large number of patients, mostly old and chronic cases who had no reserve [strength] to withstand the virulence of the attack The disease first of all assumed the gastro intestinal type, after a time this type gradually abated and lung complications then became most prevalent The Commissioners in Lunacy state that the meals were excellently cooked and the amount of food was ample for the requirements of the patients The patients were neat and well dressed, their general behaviour was quiet and proper the asylum was found to be in excellent order throughout the wards and dormitories were scrupulously clean and properly heated and ventilated, and the medical case books were correctly and well kept The committee of management *states in its report that additions* and improvements have been made to the dining rooms of the male and female attendants and that a system of electrical fire alarm has been introduced which gives exact information at the central fire station as to the block and the position of a fire

Joint Counties Asylum Carmarthen (*Annual Report for 1903*) —The average number of patients resident during the year was 647 *comprising* 321 males and 326 females The admissions during the year amounted to 177—viz , 103 males and 74 females Of these 160 were first admissions Dr Edwin Goodall the medical superintendent, states in his report that in 65 of the admissions there was ascertained a history of insanity or allied mental disorder in the parents Shock trouble and worry were present as exciting causes in 31 cases Alcohol was assigned as the cause of insanity in 20 cases or 13 4 per cent , "a lower proportion than usual A low proportion [of alcoholic insanity] was also noted last year Among the admissions special reference is made to the case of a father with his two daughters, all received together 'Such cases of so called communicated insanity are rarely seen The circumstances predisposing to their development existed in this instance, neurotic degeneration in the family, lonely surroundings, unusual anxiety, stress of mind among those attacked and a terrifying suddenness of onset in the first case Another curious feature was that death occurred in the same way and from the same cause in two of the cases ' Of the admissions 33 were actively suicidal and 22 were dangerous 89 cases, or 60 per cent of the admissions were attacked with insanity for the first time, which was in itself a favourable circumstance from the point of view of treatment of about 50 cases, since these were admitted to the asylum within three months of the attack In the previous year s report reference was made to a patient admitted for the fifth time in consequence of excess in drink

"Two other such cases," adds Dr. Goodall, "have occurred this year. Such persons in the interests of the community and of themselves should be kept for a prolonged period, or permanently if desirable, in an inebriate reformatory. Even when they happen to be suitable cases for an asylum they cannot be detained in such an institution, for legal reasons, for a sufficient period. This method of dealing with such cases is expensive and inefficient and ought to be done away with. ...... It is high time that reformatories in sufficient number were forthcoming, high time also that the powers of the law in regard to compulsory committal of chronic inebriates were enlarged." The number of cases discharged as recovered during the year amounted to 44—viz., 19 males and 25 females, or 6·8 per cent. of the average number resident. The deaths during the year amounted to 65, or 10 per cent. as calculated on the same basis. Of the deaths two were due to senile decay, three to cardiac disease, five to renal disease, six each to epilepsy and pneumonia, eight to general paralysis of the insane, 15 to pulmonary and other forms of tuberculosis, and the rest to other causes. The Commissioners in Lunacy state in their report that the day-rooms and dormitories were bright, cheerful, and in good order, that the dietary was of good quality, and that the medical case-books were well and carefully kept. The committee of management states in its report that the charge for the maintenance of patients is 9*s.* 0¼*d.* per head per week. The committee has in preparation, by the medical superintendent, a report of a scheme for superannuation of the officials and servants in the asylum service which it is expected will come immediately before the committee for consideration.

County and City of Worcester Asylum (Annual Report for 1903).—The average number of patients resident during the year was 1163, comprising 527 males and 636 females. The admissions during the year amounted to 221—viz., 99 males and 122 females. Of these, 182 were first admissions. Mr. G. M. P. Braine-Hartnell, the medical superintendent, states in his report that hereditary and family predisposition to insanity was the cause in 26·6 per cent. of the admissions, while intemperance in drink was the cause in 15·3 per cent. Of the 221 admissions 201 were in bad or indifferent health with exhausted or reduced bodily condition. The number of patients discharged as recovered during the year amounted to 104—viz., 39 males and 65 females, or 8·9 per cent. of the average number resident. The deaths during the year amounted to 94, or 8·08 per cent. as calculated on the same basis. Of the deaths five were due to cardiac disease, six each to epilepsy and general paralysis, 11 to colitis, 20 to senile decay, 21 to pulmonary tuberculosis, and the rest to other causes. An inquest was held during the year on the death of a patient due to hæmorrhage from rupture of the œsophagus caused by a piece of bone. "The patient had tried to swallow a part of a rib of beef measuring four and a half inches by one and a quarter inches. This got impacted in the œsophagus, causing rupture of the muscle. He complained of no pain and took his food without any discomfort." With the exception of the above case no other accidents during the year were fatal. Four patients escaped and were all recaptured in a short space of time. During the year four nurses and seven female and five male patients were attacked with scarlet fever, there being two deaths. Dysentery was present throughout the year. External iron staircases have been provided in several wards as additional exits in case of fire. "All the exit doors are regularly and frequently opened and the patients exercised in the use of the staircase. 14 of the external doors which opened inwards have been altered to open outwards." Electrical communication has been made from each ward to the porter's room for use in case of fire. The Commissioners in Lunacy state in their report that the rooms and dormitories were clean and in good order as were also the beds and bedding, that the dress of the patients was neat and varied, that there were no complaints as to their treatment, that the meals served were of a substantial character, and that the medical case-books were carefully and intelligently kept. Though the general health of the patients appeared to be good the Commissioners regard the sanitary condition of the asylum as open to improvement owing to the number of cases of scarlet fever, dysentery, and measles that have occurred during the year. The committee of management states that it has been compelled to raise the rate of maintenance for patients to 8*s.* 5½*d.* per head per week.

Public Health and Poor Law.

LOCAL GOVERNMENT BOARD.

REPORTS OF INSPECTORS OF THE MEDICAL DEPARTMENT OF THE LOCAL GOVERNMENT BOARD.

On Reinspection of the Borough of Whitehaven and on recent administration therein, by Dr. R. FARRAR.[1]—This report gives an account of an inspection made to ascertain the work of the town council of Whitehaven since that borough was inspected in detail by Dr. H. T. Bulstrode in July, 1902. Dr. Bulstrode's report was of interest from the discussion given to various aspects of the housing question. In the eighteenth century Whitehaven was a well laid-out town with wide streets and well-built houses, having each a strip of garden of the width of the house at the back. When owing to the development of collieries the town increased in population and it was found impossible to obtain land for building from the lord of the manor outside the limits of the town owners of house property ran up blocks of back-to-back houses in what originally were gardens. Later the interstices between these blocks and original houses were filled up with smaller tenements, wedged in wherever room could be found. The houses in the courts thus formed are without any proper supply of air or light and in various other respects are objectionable. Dr. Bulstrode was obliged to report that in many cases nothing short of their demolition would suffice to remedy the unhealthy conditions which obtained in the town. Since his report in 1902 the town council has effected an important number of sanitary reforms in various directions for which it deserves credit. But it has so far done little to deal effectively with the main question of better houses. What effort has been made has rather tended to perpetuate the objectionable conditions which the presence of many of the courts makes inevitable. Dr. Farrar now advises the provision by the local authority of a number of cottages of appropriate construction outside Whitehaven and the demolition of a corresponding number of "slum houses" in the centre of the town. This recommendation admittedly deals with only a portion of the difficulty but it is obvious that a large scheme of demolition and new building would involve a much larger expenditure than Whitehaven could afford. Dr. Farrar urges, however, that much good might be done by the judicious selection of even a small number of houses for demolition under the Housing of the Working Classes Act. Dwelling accommodation would need to be provided for the persons displaced and Dr. Farrar suggests that this might be done by the coöperation of the town council and the local colliery company, many of whose workmen at present live in the unhealthy slums of the town.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 8544 births and 5118 deaths were registered during the week ending Sept. 10th. The annual rate of mortality in these towns, which had been 22·7, 20·5, and 18·2 per 1000 in the three preceding weeks, further declined last week to 17·5 per 1000. In London the death-rate was 15·2 per 1000, while it averaged 18·5 per 1000 in the 75 other large towns. The lowest death-rates in these towns were 5·1 in Hornsey, 8·3 in Willesden, 8·6 in Smethwick, 9·4 in King's Norton, 9·6 in Handsworth (Staffs.), 11·7 in Walthamstow, and 12·8 in West Hartlepool; while the highest rates were 24·7 in Liverpool, 25·0 in Rotherham, 25·3 in St. Helens, 26·5 in Tynemouth, 28·4 in Plymouth, 29·9 in Wigan, 31·8 in Hanley, and 33·0 in Great Yarmouth. The 5118 deaths last week included 1512 which were referred to the principal infectious diseases, against 2841, 2291, and 1636 in the three preceding weeks; of these 1512 deaths, 1258 resulted from diarrhœa, 64 from whooping-cough, 63 from diphtheria, 53 from measles, 47 from "fever" (principally enteric), 23 from scarlet fever, and four from small-pox. No deaths from any of these diseases was registered last week in King's Norton; among the other towns they caused the lowest death rates in Hornsey, Hastings, Brighton, Norwich, Handsworth (Staffs), Smethwick, Bury, Halifax, and Newport (Mon), and the highest rates in Portsmouth, Great Yarmouth, Plymouth, Hanley, Stockport, Liverpool, Bootle, Wigan, and Burnley The greatest proportional mortality from measles occurred in Plymouth, Walsall, and Stockport; from diphtheria in Hanley, Bootle, Bradford, and West Hartlepool, from whooping-cough in Great Yarmouth, West Bromwich, and Stockport, from "fever" in *Aston Manor*, *and from diarrhœa in* Great Yarmouth, Plymouth, Hanley, Grimsby, Liverpool, Bootle, Wigan, Burnley, Preston and Hull The mortality from scarlet fever showed no marked excess in any of the large towns Two fatal cases of small-pox were *registered in Salford, one in Manchester, and one in New*castle on Tyne but none in any other of the 76 towns The number of small pox cases in the Metropolitan Asylums Hospitals, which had been 18, 13, and nine on the three preceding Saturdays, had further declined to eight on Saturday last, Sept 10th, two new cases were admitted during the week, against two none, and two in the three preceding weeks The number of scarlet fever patients in these hospitals and in the London Fever Hospital, which had been 1745, 1781, and 1819 at the end of the three preceding weeks, had declined again to 1816 at the end of last week, 234 new cases were admitted during the week, against 198, 263, and 266 in the three preceding weeks The deaths in London referred to pneumonia and diseases of the respiratory system, which had been 106, 101, and 108 in the three preceding weeks, further rose last week to 129 and were six above the number in the corresponding period of last year The causes of 48, or 0 9 per cent, of the deaths in the 76 towns were not certified either by a registered medical practitioner or by a coroner All the causes of death were duly certified in West Ham Portsmouth, Hull, Newcastle on Tyne, Cardiff, and in 46 *other smaller towns*, *the largest proportions of uncertified* deaths were registered in Birmingham, Liverpool, St Helens, Manchester, Preston, Sheffield, South Shields, and Gateshead

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[1] *London*: Eyre and Spottiswoode, East Harding-street; Edinburgh: Oliver and Boyd; Dublin: E. Ponsonby. Price 2*d.*

HEALTH OF SCOTCH TOWNS

The annual rate of mortality in eight of the principal Scotch towns, which had been 15 7, 16 2, and 16 0 per 1000 in the three preceding weeks, further declined to 15 7 per 1000 during the week ending Sept 10th, and was 1 8 per 1000 below the mean rate during the same period in the 76 large English towns Among these Scotch towns the death rates ranged from 9 7 in Leith and 14 0 in Edinburgh to 18 7 in Greenock and 20 0 in Perth The 519 deaths in these towns included 52 which were referred to diarrhœa, 17 to whooping cough, five to measles, five to diphtheria, five to "fever," and two to scarlet fever, but not any to small pox In all, 86 deaths resulted from these principal infectious diseases last week, against 94 97, and 100 in the three preceding weeks These 86 deaths were equal to an annual rate of 2 6 per 1000, the death rate last week from the same diseases in the 76 large English towns being 5 2 per 1000 The fatal cases of diarrhœa, which had been 66, 56, and 58 in the three preceding weeks, declined again last week to 52 of which 22 occurred in Glasgow, nine in Dundee seven in Edinburgh, seven in Paisley, four in Greenock, and three in Aberdeen The deaths from whooping-cough, which had been 16, 24, and 26, declined again to 17 last week and included nine in Glasgow, three in Edinburgh, two in Dundee, and two in Greenock The fatal cases of measles, which had been ten and four in the two preceding weeks, rose again last week to five, of which four were registered in Glasgow The deaths from diphtheria, which had been one, one, and four in the three preceding weeks, further rose to five last week, and included two in Glasgow and two in Edinburgh The fatal cases of "fever," which had been two and six in the two preceding weeks, declined again last week to five of which two belonged to Glasgow The deaths referred to diseases of the respiratory organs in these towns, which had been 47, 55, and 53 in the three preceding weeks rose again last week to 58 and were slightly in excess of the number in the corresponding period of last year The causes of 16, or more than 3 per cent, of the deaths in these eight towns last week were not certified

HEALTH OF DUBLIN

The death rate in Dublin, which had been 24 5, 23 5, and 19 9 per 1000 in the three preceding weeks, rose again to 20 8 per 1000 during the week ending Sept. 10th. During the past four weeks the death rate has averaged 22 2 per 1000, the rates during the same period being 18 0 in London and 14 4 in Edinburgh The 151 deaths of persons belonging to Dublin registered during the week under notice were six in excess of the number in the preceding week and included 32 which were referred to the principal infectious diseases, against 43, 49, and 29 in the three preceding weeks, of these, 26 resulted from diarrhœa, four from whooping cough, one from measles, and *one from "fever,' but not any from small pox, scarlet* fever, or diphtheria These 32 deaths were equal to an annual rate of 4 4 per 1000 the rates during the same period from the principal infectious diseases being 3 5 in London and 2 2 in Edinburgh The fatal *cases of diarrhœa, which had been 33, 35, and 26 in the three* preceding weeks, were again 26 last week The deaths from whooping cough, which had been three, four, and one in the three preceding weeks increased again last week to four The 151 deaths in Dublin last week included 51 of children under one year of age and 34 of persons aged 60 years and upwards, the deaths of infants corresponded with the number in the preceding week, while those of elderly persons showed a slight increase One inquest case was registered but no death from violence was recorded, 48 or nearly one-third, of the deaths occurred in public institutions The causes of six, or nearly 4 per cent of the deaths registered in Dublin last week were not certified

Looking Back.

FROM

THE LANCET, *SATURDAY*, SEPT. 16, 1826.

THE ZOOLOGICAL SOCIETY

THERE are some departments of science in which our continental neighbours have made much greater progress than ourselves, and, singularly enough, this has happened more particularly in a certain branch, in which, from our local and commercial advantages, we ought to have been the precursors

Zoology which, as a matter of study, offers peculiar attractions, as illustrating the most interesting series of Nature s laws and as connected with the history of almost an infinity of
of mankind, l
public encour
even in lazy
governments with a liberality which does them honour

We are glad to see that an Institution has at length been formed in this country for the prosecution of so interesting and useful a branch of study, and hope that it will receive that patronage which it deserves from an enlightened, and more especially from the medical public

At present the Zoological Society is the offspring of a union of individuals, and has received as yet no support from the government, which has usually shown itself ready to follow, never to lead the public opinion Previously to the meeting in April last, nearly three hundred persons had signified their intention of becoming members, and *among* these were names distinguished in science, rank, and affluence Since that period, about a hundred additional names have been subscribed, and the interest excited in favour of the Society, appears to be still on the increase A house has been taken in the most central part of western London, which is now preparing for the reception of the collections already placed at its disposal, and it is expected, that in a short time nearly two thousand species of the mammalia and birds, a number exceeding that in the British Museum, will be ready for exhibition But the views of the Society extend beyond the preservation of the stuffed skins and lifeless bodies, they embrace the maintenance of living animals Ground has been obtained for this purpose in Regent s Park, in which aviaries and enclosures of various kinds are to be formed, and a
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for its
been completed To this collection the members of the Society will have access as a matter of right [1]

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[1] Excerpts from editorial observations

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointment is announced :—Fleet Surgeon S. W. Vasey to the *Defiance*.

Fleet Surgeon John Henry Thomas has been placed on the Retired List at his own request.

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel P. M. Ellis to be Colonel, vice R. Blood, M.D., retired.

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).

The Aberdeen Company: Major J. S. Riddell to command under paragraph 55A Volunteer Regulations.

HONOURABLE ARTILLERY COMPANY OF LONDON.

Surgeon-Major T. E. F. McGeagh resigns his commission, with permission to retain his rank and to wear the prescribed uniform, and retires into the Veteran Company. John Francis Taylor to be Surgeon-Lieutenant.

VOLUNTEER CORPS.

Royal Garrison Artillery (Volunteers) : 1st Forfarshire: Surgeon-Lieutenant W. A. Taylor to be Surgeon-Captain.

Rifle: 2nd Volunteer Battalion the King's Own (Royal Lancaster Regiment): Surgeon-Lieutenant B. W. Hogarth to be Surgeon-Captain. 3rd Volunteer Battalion the Cheshire Regiment: Surgeon-Lieutenant T. A. Rothwell to be Surgeon-Captain. 3rd (Sunderland) Volunteer Battalion the Durham Light Infantry: William Byron Milbanke to be Surgeon-Lieutenant.

The King has been graciously pleased to approve of the Bearer Company of the Lancaster and Border Volunteer Infantry Brigade being formed into an independent unit, to be designated the "Lancaster and Border Bearer Company, Royal Army Medical Corps (Volunteers)."

PULMONARY TUBERCULOSIS IN THE ARMY.

According to a recent order of Lord Kitchener, the Commander-in-Chief in India, all soldiers of the British Army serving in his lordship's command who are suffering from pulmonary phthisis are in future to be invalided home at once instead of being treated, as has hitherto been the case, at the local sick quarters and hospitals throughout his command. In consequence of this order the Indian mail steamer *Arabia*, which arrived at Plymouth on Sept. 11th, brought home 22 of such military invalids from Bombay. It goes without saying that the medical authorities in India might, if only in the interest of the sufferers, have to retain a few phthisical patients who, however desirous they themselves were of encountering any risk in order to get home, might yet be so manifestly unfit to undertake the journey that it would be cruel to let them make the attempt. Patients suffering from pulmonary consumption do not, as a rule, progress favourably in such a hot and enervating climate as that of India and there is no reason therefore, even apart from the fact that they only serve to swell the sick and inefficient list, why they should be retained there for treatment. They would, on the contrary, probably do better in this country, but we think that, speaking generally, care should nevertheless be taken in regard to the selection of such patients, as well as in taking advantage of the best season for sending them home, in order to avoid their landing in this country in midwinter or at the beginning of the cold weather, with its discomforts and risk of the patients contracting inflammatory lung complications. With our more precise knowledge of the causes of this disease and its modern systems of treatment, both prophylactic and curative, broadly based on hygienic principles we have made a great stride in advance. So far as we know, no separate provision has been yet made, however, in the army for the special accommodation and treatment of these cases in all their stages in accordance with existing views but such provision will have to be made. In the meantime there are many newly constructed army hospitals to be found, in the Isle of Wight, for example, and elsewhere, which, in point of climate, open and healthy sites, accommodation, and appliances, are well adapted and might be utilised for this and similar purposes. It seems a pity that the advantages which they offer should be restricted to the relatively small number of sick labouring under ordinary and often trivial ailments drawn from the troops in their immediate locality. There seems to be no reason why cases of phthisis should not obtain in such places all the benefits of isolation and open-air treatment, while soldiers convalescing from other diseases might, with proper precautions, reap the advantage of all the air and sunshine obtainable in this country.

DEATHS IN THE SERVICES.

Surgeon-General James Jameson, M.D. Glasg., C.B., honorary surgeon to the King, late Director-General of the Army Medical Service, at Newlands, Eltham, on Sept. 13th, aged 67 years. Surgeon-General Jameson graduated as M.D. at the University of Glasgow in 1857 and entered the army as assistant surgeon in November of that year. He was Director-General of the Army Medical Service from May, 1896, to September, 1901, when he was succeeded by Surgeon-General Sir William Taylor, K.C.B. It was during Surgeon-General Jameson's tenure of office that the Royal Army Medical Corps was constituted.

Surgeon-Major John Campbell, C.B., late of the Indian Army, at his residence, The Quarry, East Looe, Cornwall, on August 26th, in his eighty-seventh year. The deceased was born at Looe on April 27th, 1817, being the youngest son of Captain Thomas Campbell, R.N. He entered the Indian Army as a medical officer and during the first Afghan war in 1841 he served with the troops marching from Jerezepore towards Cabul. He was with Wylder's Brigade at Peshawar and in its ineffectual attempt to force the Khyber Pass and to join General Sele, who was at Jellallabad. He was also with the army under General Pollock which marched through the Khyber Pass to Cabul. During the suppression of the Indian Mutiny he was again actively employed and for his services at the siege of the Residency at Lucknow was created C.B. in November, 1858. He retired from the service in 1864 and took up his residence at Looe, where he soon became extremely popular owing to his many acts of kindness.

ARMY REFORM.

We seem to be as far off as ever from reaching any really large, effective, and satisfactory measure of army reorganisation and reform. The more the present War Minister's proposals in this direction are scrutinised and considered the greater seems to be the growth of misgiving in regard to them. That the new scheme embodies many sound and excellent principles is admitted but further and fuller explanations and details are required. The recruiting question lies at the root of the problem and there is no well-grounded assurance that this has yet been solved. It must be allowed that we were able during the late war in South Africa to put a large force in the field in a relatively short space of time, but it seems doubtful whether the newly proposed "striking force" to be kept ready for war purposes is sufficiently large for the object in view and the question arises as to how it is to be kept up during war. With no representative of the medical and sanitary needs of the army on the Army Council it is difficult to see how they are to be satisfactorily dealt with, and to lower the age of young soldiers intended for service in India below what it is now appears to be, as we have previously said, a retrograde step in army hygiene.

THE WAR IN THE FAR EAST.

At the moment of writing there is a temporary lull in the warlike operations in the Far East owing to various causes. The belligerents of both sides are exhausted by the very hard and almost continuous fighting which has been taking place, by the hardships, want of food, and fatiguing marches which the troops have had to encounter, well-nigh rendering further efforts on their part a physical impossibility, and by the reappearance also of torrential rains making the roads impassable for transport. Both armies are simply worn out by their terrible exertions, but no pause is, nevertheless, taking place in the hurrying up of strong reinforcements in order to renew the encounters at the earliest opportunity. Although General Kuropatkin has been unable to ward off the very heavy blow which has been struck at the prestige of his country he has succeeded in maintaining, and even in adding to, his military reputation by his masterly if terrible retreat from Liaoyang. The main facts regarding the object, nature, and extent of the fighting in and around Liaoyang have now been made sufficiently clear to enable us to form a fairly accurate idea of what has taken place. If the Japanese have failed in securing the great object which they had in view they have nevertheless defeated and caused the retreat of the Russians from an extremely strong and commanding position And if General Kuroki s army after the severe fighting at Hai yen tai—which was the Spion Kop of the operations—was too exhausted to follow up and "to head off " the enemy before reaching Mukden it still remains to be seen whether this cannot be done somewhere beyond that position As regards the casualties on the two sides there is as might be expected, some difficulty in forming a correct estimate, but there can be no doubt that they were very heavy on both sides The difference, it must be remembered, of a single day in collecting the returns of the casualties will cause an important difference in the sum of the number wounded on a given occasion The Japanese official estimate of their total casualties in the Liaoyang fighting amounts to 17,539, and they state that they buried over 3000 Russians on that occasion and that over 10 000 killed and wounded are estimated to have been sent off by train The Russian official estimate of their losses at Liaoyang is practically given as about the same as the Japanese—that is to say, over 17,000, including 4000 killed But there can be no doubt that it was much larger than this (probably over 25 000 from the day of the evacuation of Anshanchan to the fall of Liaoyang) Unofficial estimates at St Petersburg put the Russian losses in and around Liaoyang and during the retreat to Mukden as even reaching 40,000 Those who are desirous of ascertaining the numbers and proportions of killed, wounded and missing in various battles will find a good deal of information thereon in Longmore s 'Gunshot Injuries (Longmans Green and Co , 1895) and in his treatise on "Ambulance Transport publi hed by the War Office From all that we read and hear it seems clear that not only must the belligerent armies in the field have been exposed to great hardships, excessive toil, wet, and famine but from the fact that the number of sick and wounded was so great these must have undergone a very lamentable time of neglect and suffering We hear but little of the sickness on either side This must in the circumstances be considerable It is stated that the Japanese troops besieging Port Arthur have many cases of beri beri among them Despite the very best efforts of medical administration it is simply impossible to deal promptly with such overwhelming conditions as have of late presented themselves It is not surprising to learn, therefore that the scenes on the battle fields were often appalling The Japanese Red Cross Society which has usually worked in an admirable way, proved unequal to the unprecedented strain put upon it and many of the wounded succumbed for lack of timely attention With the Russians conditions are stated to have been infinitely worse The medic

are assisting the surgeons

belligerents All the Russian

to have been sent north from Mukden The troops are distributed in positions around the town

The siege of Port Arthur is proving a far harder task than had been anticipated Its fall would liberate a large Japanese force for taking part in the field operations elsewhere Unhappily there does not appear to be any near prospect of an end to the war Both sides are making stupendous efforts to carry it on and there are no present hopes that any attempts at mediation would be of any avail

Correspondence.

"Audi alteram partem."

THE NATURE AND ETIOLOGY OF CANCER

To the Editors of THE LANCET

SIRS,—In your leading article on the Nature and Etiology of Cancer in THE LANCET of August 13th, p 473 you say 'Let those who in future essay to advance our knowledge of cancer regard it as their first duty to add *new facts* to those long known I agree with Mr T W Nunn in hoping that the remarks you have made on this subject may induce medical men to see the importance of inquiring into and recording actual facts rather than formulating new theories of which we already have a superabundance In my opinion a most important point for further investigation is the relationship between tubercle and cancer I hold most strongly that in every case of cancer careful inquiries should be made into the family history of consumption

Roger Williams was I believe, the first to draw attention to this point, for which sufficient credit has not been given him In his book on "Diseases of the Breast, with special reference to Cancer, ' he remarks 'No hereditary condition is more favourable to the development of cancer than that which predisposes to and accompanies tubercle ' Amongst his cases of mammary cancer he found there was a family history of consumption in 55 per cent I found it in 39 per cent of my own As 19 per cent may be taken as the average of a family history of consumption amongst the general community it is evident that as far as our two sets of statistics go the proportion is much increased in cases of mammary cancer In addition to the case mentioned in my book where a youth aged 23 years, who had lupus of the face and nose, developed an epithelioma of the upper lip after being subjected to the x rays for three occasions only, I notice that in THE LANCET of June 11th p 1659, Dr Norman Walker at a meeting of the Edinburgh Medico Chirurgical Society reports three apparently similar cases and in one of these the epithelioma developed *before* the application of the x rays Surely these *facts* point to an intimate relation between tubercle and the development of malignant disease and show the necessity of carefully inquiring into the actual presence of or predisposition to tubercle in all future investigations

or

that you think that 'similar

in respect to cancer in other regions of the body might be instituted with advantage, ' as it corroborates my view that as a preliminary to the study of the etiology of cancer each region where it occurs should be studied separately We are not justified in assuming that cancer is always due to a single cause or that it is necessarily the same in the different regions I would urge the discontinuance of the terms predisposing cause and actual cause We have at present no means of differentiating between the two and few are agreed as to what should be considered a predisposing and what an actual cause In fact, the use of these terms is misleading and presuppo es a knowledge we do not at present possess It induces many pathologists to investigate only along those lines which they imagine will lead them to the attractive discovery of the so called actual cause and to neglect or to hold of little value those simple but somewhat dry facts which I think, must prove the foundation stone on which the greater part of the etiology of cancer—at any rate in the human subject—will eventually be laid I am Sirs yours faithfully,

Wimpole street W August 29th 1904 CECIL H LEAF

INDIRECT SPECIFIC INFECTION THROUGH THE ALIMENTARY TRACT IS THE IDEA CONCEIVABLE?

To the Editors of THE LANCET

SIRS —May I through the medium of your columns draw the attention of the profes ion to the possible risk of indirect specific infection through the alimentary tract after operation I am well aware that many consider the above mentioned phenomenon to be inconceivable on the ground that should specific organisms or toxins be ingested the antiseptic action of the alimentary secretions is sufficiently powerful to destroy or to neutralise them

Some months ago I had the opportunity of assisting at an operation for flat foot and as this, I think, is a case in point I will make no apologies for mentioning the matter The operation was conducted with due regard to efficient asepsis and the patient so far as was known had no organic disease before the operation and showed a fair history The primary operation wound healed by first intention and went on well for a week At this period he complained of feeling unwell and displayed a temperature of 99° F The next thing observed was redness œdema and di comfort at the closed wound which was immediately opened up and disclosed a small quantity of pus I examined this pus and was able to demonstrate tubercle bacilli Feeling convinced that this specific condition was in some way connected with the simple operation I made every possible inquiry and examination and at last was able to demonstrate a case of tuberculous mastitis in a cow which belonged to the herd supplying the nursing home where the operation took place. Bearing in mind Kipling's story of the war correspondent and the sea serpent I refrained at the time from doing more than indicating my views to the surgeon in charge of the case. Lately I have been planning a series of ingestion experiments with a view to threshing the matter out thoroughly. Should the suggestion prove not to be fallacious it is easy to foresee elementary prophylaxis would demand the "Pasteurisation" of all food for at least a week after operation. With regard to research in this direction, I should esteem it a favour if any of your readers could suggest literature bearing on the point. Klein omits to refer to the matter, also Woodhead. Sternberg, I think, passes it by. Also our most able exponent of asepsis fails to mention the possibility of the idea in his invaluable monograph on Aseptic Surgery.

I am, Sirs, yours faithfully,
Lancelot Wilkinson.

St. Bartholomew's Hospital, London, Sept. 5th, 1904.

PHIMOSIS AND HERNIA.

To the Editors of The Lancet.

Sirs,—In his lecture on the Pathology and Treatment of the Herniæ of Children, published in The Lancet of August 20th, p. 511, Mr. Edred M. Corner refers to the causal relation between phimosis and hernia. He lays most stress in his argument against this theory upon the fact that "the preputial orifice is rarely small enough to be of such paramount importance" and he proceeds to say that "ballooning of the prepuce" would occur and be observed by the nurse. In most cases of phimosis there is usually so much adhesion that ballooning would be impossible. Mr. Corner ignores some other evidence on this subject. The reflex irritation of an ordinary phimosis induces frequent micturition and the amount of straining exerted to empty a bladder with very little in it is greater than that required to discharge one moderately full. Moreover, besides the straining of frequent micturition, the persistent annoyance of a tight prepuce irritates the baby, makes him not only fretful and restless but induces paroxysmal attacks of screaming and these vocal efforts exert no mean amount of pressure on the abdominal walls.

Experienced nurses have repeatedly told me how much less frequent attacks of crying have been after circumcision. Quite recently I have had an opportunity of watching a small inguinal hernia which made its appearance about six weeks after birth completely disappear soon after circumcision. It is true a truss was worn for a few weeks but it was then removed and there has been no recurrence of the hernia up to the present. Among the ancient sanitary laws of the Jews I am inclined to believe that the rite of circumcision was by no means one of least value.

I am, Sirs, yours faithfully,
Uppingham, August 29th, 1904. H. Lyon Smith.

PATENT INFANT FOODS AND THE RISK OF SCURVY.

To the Editors of The Lancet.

Sirs,—The subject of infant feeding is often treated in your columns, forming the substance of lectures, papers before medical societies, and books under review. There are many observers seeking by scientific methods to devise normal physiological foods for infants who are deprived of breast milk. In the meantime we have to deal in practice with such means as are available and to recognise that a large and increasing number of infants are still fed on "sterilised milk," condensed milk, or one of the numerous patent foods which are in the market. That these foods vary greatly in quality and value has been shown, especially by Dr. R. Hutchison,[1] and the careful reader of his excellent address will have no difficulty in distinguishing those that have some claim to be considered as normal infant foods from those the composition of which is altogether unsuitable. Recent works on infant feeding either condemn patent foods *in toto* or admit one or two as perhaps useful in certain conditions.

There is one feature of the use of these prepared foods which has not, I think, had full attention: its relation to the risk of scorbutic disease. Only a few weeks ago[2] Dr. G. F. Still described in The Lancet two cases in which well-marked symptoms of infantile scurvy appeared after feeding with condensed milk and Allenburys and Benger's foods. It is well known that infants in whose dietary "fresh" or living food has no place are liable after the age of six months to the outbreak of this disease. It is also generally agreed that milk loses what have been called in this connexion its "natural living qualities" by heating to the extent necessary for boiling, for producing sterilised or pasteurised milk, and for making so-called "condensed milk." For the same reason those patent foods which belong to the class of desiccated milk and are mixed for use with water only, like the Allenburys (I. and II.), Horlick's, Carnrick's, and Nestlé's foods, form when given alone a diet insufficient to provide against the risk of scurvy. Patent foods directed to be mixed with fresh milk are much less liable to this objection, but if, as in the case of Savory and Moore's, Benger's, Allenburys No. III., and others, the milk is to be boiled, it furnishes no protection against such disease. It is further to be noted that although infantile scurvy is a comparatively rare disease and appears in a developed form only after the age of six months, it is probable that the like disorder may be present in slighter degrees; and that anæmia and poor nutrition, with perhaps tender gums, occurring in many infants at an earlier age may be attributable to a similar though less severe change in the blood. On the other hand, the means of preventing such blood disorder are simple and ready to hand—viz., the administration of a little floury potato, crushed rice, grated banana, raw meat juice, or the juice of orange or grape, besides fresh unboiled cow's milk. The habit of the poor to give to their babies "a little of what we have ourselves" may often disturb their digestion but in my opinion the teaspoonful of potato and gravy from the mother's plate saves many infants fed on condensed milk or on one of the cheaper patent foods from scorbutic trouble. In this way the poor may actually avoid some of the risks attending the stricter feeding practised by the rich.

The object of stating these facts is in order to urge the duty of our profession to show to the manufacturers of sterilised and condensed milk and infant foods the need of clear directions, to be printed upon all their tins and bottles, that after the age of three or four months one or other of the articles of fresh food alluded to should be given in small quantities twice a week in addition to the prepared food. It is necessary, too, that the public should be educated in the same sense, especially as printed instructions are often little read. Some of the best foods are already protected in this way—e.g., the Allenburys, Mellin's, and Benger's—whose proprietors give clear directions to the consumers for the occasional use of fresh diet whilst taking the patent food. It is only fair to state this as it is pretty evident that in Dr. Still's cases the printed advice had been disregarded. I quote from the label on the Allenburys food No. II.:—

> It is advisable, after the first two or three months of life, to give, in addition to the manufactured food of whatever kind, some fresh material, such as grape juice, the sweetened juice from .... an orange, &c.

If these directions were made still more prominent and if the numerous patent foods which at present give no such warning were provided with it I think that the health of a multitude of hand-fed infants would be helped, without waiting for the day, for the coming of which food reformers are working, when a truly normal substitute for human milk in cases where this is not available shall find full acceptance.

I am, Sirs, yours faithfully,
Weymouth-street, W., Sept. 5th, 1904. R. Hingston Fox.

LAYMEN AND ELECTRICAL TREATMENT.

To the Editors of The Lancet.

Sirs,—I trust that you will allow me a little space to reply briefly to Mr. Chisholm Williams and others who have criticised my note on the above subject in The Lancet of August 6th. People have a curious way of misunderstanding or overlooking language the meaning of which appears quite obvious. I specially guarded myself against the idea of handing patients over to "people who pose as healers or who prefer to act apart from medical men." If this quotation from my letter has any meaning it disposes beforehand of all your correspondents virtuous indignation over my supposed advocacy of the support of quacks or quack institutions

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[1] See The Lancet, July 5th, 1902, p. 5.

[2] The Lancet, August 13th, p. 441.

None of your correspondents have advanced any arguments or stated any facts to support the contention that it needs the skill and knowledge of a qualified medical man to apply electricity in the great majority of conditions in which it is found useful, such as those I mentioned in my previous note I should say that to one case which requires the knowledge and skill of a man like Mr Chisholm Williams there are at least 20 that can be perfectly well treated by a masseur or masseuse who has received the excellent training of the modern teachers of massage and electricity Indeed, I venture to suggest whether it is not somewhat derogatory to the dignity of the profession for a qualified medical man to undertake the routine treatment of such cases

To correct Mr Chisholm Williams s and others' misconstructions of my remark about having one s ideas of diagnosis and treatment overhauled by another practitioner I will narrate a case in point I sent an intractable case of Graves s disease for treatment to a highly qualified medical electrician (who, I believe, charged a guinea for each sitting) Without any thought or intention of breach of faith towards me he rather pooh poohed the idea of using electricity and, of course, absolutely discouraged the patient thereby preventing her giving electrical treatment a trial of sufficient duration to convince me of its value or *otherwise in her case* Had I *sent this patient to* a lay electrician acting under my own instructions she would have continued the treatment as long as I thought it worth while I have no lack of confidence in the good faith of my professional brethren but I contend that skilled knowledge of a special line of treatment does not put the electric practitioner in possession of all one s reasons for desiring a certain line of treatment in a particular case I cannot see any analogy between the case of a non medical but trained person applying electrical treatment when prescribed by a physician and that of a patient being treated by a bone setter or quack oculist Finally I must say that to talk about covering in connexion with my letter—if read with ordinary intelligence—appears to me to be rank absurdity

With regard to the x rays my experience is limited to their use by qualified medical men I am glad to learn from Mr Chisholm Williams that it is possible to get such treatment at a scale of fees within the reach of middle class patients —I am, Sirs, yours faithfully

E Stanley Smith M D Durh M R C P Lond

Wimpole-street, W Sept. 10th 1904

APOCYNUM CANNABINUM

To the Editors of The Lancet

Sirs —The editorial note on the Uses of Apocynum Cannabinum in The Lancet of Sept 3rd p 734 will I hope, direct the attention of the profession to a remedy which I have found of the greatest value and have constantly prescribed for the last 14 years The drug was first introduced to my notice by Dr Joseph Kidd who recommended me to try it in the case of a patient with dilated heart who had passed from his care to mine when she moved into the country The disease had reached a stage when the patient could no longer rest recumbent the anasarca and ascites being so advanced that paracentesis appeared to afford the only chance of relief The 'vegetable trocar ' however, answered admirably Within the first two days of its administration the urine rose from about ten ounces in the 24 hours to 60 and the diuresis increased daily until the ascites and the anasarca almost disappeared the patient getting about again and living for two years Again and again I have had similar experience and a large number of my colleagues in this district now employ the remedy having seen such marked benefit from it in cases of cardiac and renal dropsy in which we have consulted

I have always used Keith s concentrated tincture [1] which Dr Kidd recommended as the only reliable preparation of the drug Several of my professional brethren who have employed the tincture usually kept by chemists have been disappointed in its effects, and to the want of activity in this the ordinary tincture must I think be attributed the fact that apocynum cannabinum has not come into more general use The fluid extract recommended by Dr J Pawinski may be equally efficacious with Keith s preparation but of this I have no experience The irritant action of the drug upon the digestive organs is a positive quality which must be borne in mind In the first case in which I so successfully employed apocynum the dose recommended by Dr Kidd who was, at the time, I believe supposed to prescribe drugs in decillionths and similar fractions of their ordinary doses caused violent vomiting and purging and I had at once to reduce it to one sixth the amount In cases of cirrhosis of the liver I have found the smallest doses cause dangerous gastric irritation and I always warn [illegible] against [illegible] in these [illegible] prescribe [illegible] from one to two minims every four hours or three times a day increasing the dose by one minim every two days until the maximum which the stomach and intestines will bear is reached, this is seldom as much as ten minims The medicine may be combined with other heart tonics Employed carefully in this way its beneficial effects have in my own experience and in that of the many friends to whom I have introduced apocynum cannabinum, been astonishing and yet so little is the medicine known that only once, when in consultation I have advised its use has *my colleague* been familiar with it and that man immediately said ' I know where you got that from it was from Kidd

With the precautions which I have indicated I strongly advise your readers in cases of cardiac and renal dropsy to try this remedy the merits of which I have long intended to press upon the notice of the profession through the medium *of your columns*

I am Sirs yours faithfully,

Thomas James Walker, M D Lond

Peterborough Sept. 10th 1904

THE UTILITY OR OTHERWISE OF FEVER HOSPITALS

To the Editors of The Lancet

Sirs —I entirely endorse the view to which Dr C K Millard gives expression in your issue of to day s date that should an inquiry take place the fact of having taken part in this controversy ought to constitute a disqualification for a place on the Commission I agree, also with the suggestion that sanitarians who have been actively instrumental in *securing the provision* of fever hospitals in the *past* should not be placed in the invidious position of having to sit in judgment on their own actions The fact that many able and conscientious medical officers of health will thus be excluded need not be deplored seeing that their evidence will be available and will lose none of its weight Now a word of caution I cannot help thinking that undue haste would be a great mistake *Festina lente!* The reasonable demand that an inquiry should be held has been too grudgingly conceded up to the present time to justify the hope that this important question is ripe for settlement on its merits Let us leave it for a time in the crucible of intra professional discussion where the truth should be in no danger

In conclusion I echo your suggestion Sirs that the controversy may well be conducted without personalities in the future Indeed there is no room for them For whatever *be the outcome of this inquiry* should it take place, it will not be denied that much good has *already* been accomplished which will be a distinct gain to the cause of public health I am Sirs yours faithfully,

Nottingham Sept 10th 1904 Edwd Dean Marriott

THE BOILING OF MILK

To the Editors of The Lancet

Sirs —May I as the iconoclastic scientist referred to by Dr J M Fortescue Brickdale in The Lancet of Sept 10th p 792 offer a word of explanation with regard to the slight misapprehension he is under as to my views on the boiling of milk In the course of my conversation with Mr R Bevan I did not enter on the very debatable ground included under reasons (2),

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[1] Keith s concentrated tincture of apocynum cannabinum may be obtained from Gale and Co 15, Bouverie-street London E C and probably from other wholesale druggists

(3), and (4), the uncertainty of the views held by various observers on these points being ably shown by Dr. Fortescue-Brickdale. My observations were really confined to the question of boiling as a preventive measure against souring, and in this connexion I can only reiterate the assertions I made to Mr. Bevan—viz., that it is a very dangerous process if it be carried out for the purpose of *preserving* milk during those portions of the year when the prevailing temperature throughout the whole 24 hours does not fall below 65° F. The boiling of milk destroys the ordinary lactic acid organisms but it does not destroy the spore-bearing organisms that are almost invariably present, with the consequent result that when the milk is cooled and allowed to stand at a temperature in the neighbourhood of 70° F. a secondary fermentation takes place due to the development of these latter organisms. Herein lies the danger, for the milk does not sour but usually remains sweet in taste, though a very slight bitterness (due to the peptonising action of these bacteria) may perhaps be detected The temptation to use milk in this condition is naturally great, for apparently it is still in a sound condition, while, as a matter of fact, it is becoming rapidly charged with deleterious bacterial products. Now the development of these peptonising bacteria is in a clean milk almost completely checked by the wave of lactic acid fermentation, while if this be stopped by the process of boiling a perfectly free field is left to the sporogenous types to grow unhindered and to bring about a toxic condition of the milk which would otherwise not have occurred. If milk be boiled to be drunk immediately it may be, and probably is, as a preventive measure of the greatest value, but if the milk is going to be kept over night for consumption next day such an end is completely defeated. It may well be asked, "What, then, is to be done in the circumstances?" If I were to dare to suggest the word "preservative" harsher words than "iconoclast" might be used, but the question whether preserved milk or putrefying milk is the better as an article of diet I will leave others to answer, and although the addition of preservatives by the milk trade should on no account be allowed the addition of them in the home, under a medical man's direction with regard to quantity, is quite another matter.

I am, Sirs, yours faithfully,
CECIL REVIS.

King-street West, Hammersmith, W., Sept. 13th, 1904.

MATHEMATICS AND EXAMINATIONS IN PUBLIC HEALTH.

To the Editors of THE LANCET.

SIRS,—Medical officers of health in their annual reports have to submit figures of the increase and decrease of populations and to make calculations as to the death-rate, infantile mortality, birth-rate, &c., of their districts, and it is unfortunate that at the various examinations in public health candidates are not systematically tested on these points. They are often asked questions more likely to crop up in an insurance office, but the use of logarithms and the estimation of a population after the method of the Registrar-General are seldom asked for by the examiners. Surely these are practical matters which everyone who holds a diploma in public health should be acquainted with, but I have known cases where medical officers of health, fully qualified, were unable to make these calculations.

I am, Sirs, yours faithfully,
MU.

ST. BARTHOLOMEW'S HOSPITAL.—A history of St. Bartholomew's Hospital has been written by Dr. Norman Moore and will be published shortly by Messrs. C. Arthur Pearson, Limited. The work will be illustrated by original sketches by Mr. Howard Penton. The volume will be issued at two prices—namely, two guineas and one guinea—and the whole of the proceeds of the book will be given to the fund for the rebuilding of the hospital. A list of the subscribers to the first edition, which will be limited to 2000 copies, will be printed as an appendix to the work. Intending subscribers are requested to send their names to the honorary secretary of the rebuilding fund, St. Bartholomew's Hospital, Smithfield, London. This work should prove entertaining and instructive to many and a desirable acquisition as a work of reference to the student of history and philanthropy.

THE FEEDING OF SCHOOL CHILDREN.

HISTORY AND ORGANISATION OF THE PARIS CANTINES SCOLAIRES.

(FROM OUR SPECIAL SANITARY COMMISSIONER.)

THE supposed physical degeneration of the race has been the subject of so many sensational dissertations that public interest is now fully aroused and the nation is anxious to deal with the matter. It may be, as some very good authorities contend, that with a falling death-rate and a longer average duration of life it cannot be maintained that the race as a whole is losing its strength and vitality. On the other hand, no one has attempted to deny that there is physical degeneration among certain sections or classes of the community. Such degeneration must occur notably among those who in their infancy and childhood have been insufficiently or injudiciously fed. As, further, the law renders education obligatory we have in the primary schools a machinery all ready made and at hand permitting full investigation into the facts of the case. There are here also the means of remedying the evil wherever it shall have been proved to exist. Whatever political economists and others may say, no medical man would maintain that it is possible to educate an underfed child without grave risk to his or her health. From the physical point of view there can be no question but that the child must be fed first and educated afterwards. Nevertheless, it has been asserted over and over again that in London alone there are daily some 50,000 children who go to school without breakfast. Whatever the basis of this assertion and even if exaggerated there is not the slightest doubt that many of the children who attend the primary schools are often injudiciously fed, sometimes insufficiently fed, and on some days not fed at all. To attempt to teach children thus suffering is to waste public money as well as to injure the child pupils. It is certainly a means of producing physical degeneration. By law and by taxation schools and teachers are provided and yet food is more necessary than either school or teacher. This, of course, will be admitted by everybody. Only it will be said that parents ought to feed their own children. It is, however, the obvious fact that some parents either cannot or will not feed their children and this accounts for much of the physical degeneration. Nevertheless, years have rolled by and nothing has been done of a systematic character. Here and there charitably inclined people have organised soup kitchens in connexion with schools in very poor quarters, but these are sporadic local efforts and are not to be relied upon. Also it is not charity, with its pauperising and degrading influence, that is needed, but a national scheme by which, in some way or other, every child shall receive, without imposing any humiliating condition, all that is necessary for its physical as well as its intellectual development. How this is to be done and who is to pay the cost are problems that will not be easily settled. But it can be done, it has been done, and what has been achieved in other countries will probably be attempted here. In any case, if a foreign nation feeds all its children adequately and if all are not fed in England then, in time, we shall stand at a disadvantage when compared with that foreign nation. Now, the nation in question is our nearest neighbour, France. Surely it behoves us to know what has been done so near at hand and to see if this example may not serve as an object lesson.

It was from the school fund (*caisse des écoles*) that the school canteens (*cantines scolaires*) gradually merged into existence. In the latter days of the Second Empire a law on primary instruction was enacted which bears the date of April 10th, 1867. Article 15 of this law is thus worded :—

> A deliberation of the municipal council approved by the prefect may create in all communes a school fund for the purpose of encouraging [illegible] rewards to the most assiduous pupils and [illegible]e revenues of the school fund will consist [illegible] of subventions given by the commune, by the department, or by the State. With the authorisation of the prefect it may receive gifts and legacies. Several communes may be authorised to join together for the formation and management of such a fund. The service of collecting for the fund is rendered gratuitously.

M. Duruy, at that time Minister of Public Instruction, issued a circular on, May 12th, 1867, explaining this law. He said it was best to leave to the inhabitants the care of taking the initiative in the creation of such funds and drew attention to a fund already in existence in the Second Arrondissement of Paris This fund had been established by the National Guard in 1849, under the Second Republic The circular also calls attention to the fact that such funds are in existence in Switzerland where, "in accordance with a touching custom, newly married couples on their wedding day hand over to the school fund a sort of offering to childhood" The above law however, can only be qualified as the promulgation of an idea and the approval of a scheme, it did not enforce its application Three years later the Franco German war broke out and it was only three years after the war that the nation had sufficiently recovered from its disasters to think of these proposed reforms Early in 1874 a school fund was created at Montmartre, a district which has some 200,000 inhabitants, and in other localities This was done in harmony with the stipulation of the law of April 10th, 1867, but already in the minds of the more ardent friends of education the scope of the law was enlarged Thus the school fund of the Montmartre district so far back as 1874 issued a pamphlet in which the following passage occurs —

[illegible]

Thus, from the very beginning the idea germinated of giving material help in regard to physical requirements Very little, it is true, was done at first The distribution of strong thick boots is one of the first items on record Then there is also an account remaining of outfits provided for some young girls who had so distinguished themselves as to be admitted to the Ecole Normale or training school for teachers, but were too poor to dress themselves well enough to go to such an institution These and many other voluntary efforts made in different parts of France though altogether insufficient, had a double advantage They created the nucleus of future administrative bodies and prepared or ripened public opinion so that it was ultimately possible to convert into an obligation that which had formerly been but a voluntary effort This final step was brought about by the law of March 28th 1882 on compulsory education Article XVII of this law enacts that

> The school fund instituted by Article XV of the Law of April 10th 1867 shall be established in all the communes.

Thus every district is now compelled to institute a school fund and soon there followed a great change in the policy or the purport of these school funds Originally they were intended to aid the cause of education by urging children to attend school and by giving them prizes when they distinguished themselves Now the law compels everyone to go to school and also provides efficient teaching Therefore the school fund administration need not attend any longer to such matters but find ample occupation in seeing to the physical requirements of the pupils The police compel the children to go to school and the State by the appointment of teachers, attends to their education To the school fund remains the questions of food, of clothing and of health restoring holidays All these are matters of great complexity and [illegible] children to the country it may still be said that more might with advantage be attempted But if in this there remains room for further improvement it may now be said with confidence that in Paris and in most other places every child attending school receives a *wholesome* and a sufficient meal Personally I can only speak of what I have seen in Paris, but the law applies equally to the whole of France though the success of its application must depend to a large extent on the devotion or intelligence of each local school fund committee of control

That the question of health predominated in the management of these funds is shown by the preference very generally given to school colonies over school excursions, where there was not money enough for both By school excursion is meant an expedition of one or more days into the country The teachers, in accompanying the pupils, give such explanations of what is seen as to constitute object lessons This is at once a pleasant change and a useful means of education But it is generally considered far more beneficent and useful to select a certain number of sickly and debilitated children and to send them for several weeks to some bracing country place where their health may be thoroughly restored This is called a school colony and constitutes a great and happy feature of the educational machinery Thus, for instance, the Montmartre School Fund has purchased a magnificent mansion and its surrounding park at Luzancy, not many miles from Paris There four batches of 186 children spend several joyful weeks during the course of the summer living nearly all the time in the open air The school fund of the neighbouring district, the XVII Arrondissement, sent last year 137 children to the seaside at Fecamp and 281 to the country at Montlhéry, making in all 418 children who spent a total of 8500 days right away from the big town enjoying wholesome recreation in the fields or on the seashore What this means in health and happiness to these poor children cannot be expressed by mere statistics, it is best left to the imagination To help to defray the cost of these school colonies the municipality has voted an annual subvention of £8020 divided between the 20 school funds of the 20 Paris districts, or *arrondissements*, in proportion to the number of poor in each locality

As a rule, each school fund has three committees—one for the school canteens one for the provision of shoes and clothing and the third attends to the holiday excursions and holiday colonies The general committee from which these subcommittees are chosen generally consists of the mayor, the members of the municipal council, and the government school inspector of the district Then the voluntary subscribers to the fund elect out of their own ranks and by a ballot vote probably 20 or 24 committee men Thus the local authority and the local subscribers are both represented and share in common the task and responsibility involved Early in the day it was found expedient to obtain the assistance of ladies At first many of them were connected with church charities and were called lady patronesses But this did not work at all No one wanted to be patronised and the main object of education as at present organised being to inculcate the sense of the duties and of the dignity of the citizen any idea of charity is absolutely antagonistic to the whole spirit of modern educational reform The lady patronesses were no longer allowed to interfere and in their stead lady delegates were appointed Their mission is not to patronise but to see that the rules are applied and that everyone obtains his rights These ladies have a card bearing the stamp and signature of the mayor and also sometimes wear a ribbon favour of the colours of the town The lady delegates to the canteens must visit the schools under their charge at least once a week They inscribe the accounts on the printed formulas and see that all is absolutely clean and that the meals are well prepared In this respect the ladies have rendered great service, for it is due to their special knowledge and skill that the cost of the meals has been considerably reduced

It was in May, 1877 that the Prefect of the Seine informed the various school funds of Paris that the municipal council had determined to study how a good, wholesome, warm meal might be given to all the children once a day The answers at first obtained were not encouraging The school funds had not the means either in regard to management or in regard to their financial resources to attempt so vast an enterprise It was also estimated that such meals would cost on an average 25 centimes (2½*d*) each For the moment the matter dropped But in February, 1881, the question was raised whether all the children who were attending school and whose parents were in receipt of poor relief might not be given a meal while at school The school fund of the Montmartre district at once volunteered to undertake this service Other districts followed the example The municipality voted funds in aid, and a report presented for the year 1884–85 showed that during the year 15 canteens had served 1,110 827 portions, one third of these were helpings of soup another third meat, and the rest vegetables The children had paid 36 776 francs 90 centimes for 736 526 of these helpings, while 374,301 helpings had been given without payment The total cost was 59 264 francs 95 centimes The portion of meat then given weighed from 15 to 20 grammes and cost the school funds 0 0578 franc But soon and with better organised surveillance and management the portion was increased to 20 or 25 grammes and the cost was lowered to 0 045 franc

The system of feeding the children was thus fairly launched. It has now become universal and experience has taught that the cost need not be more than 15 centimes or 1½*d.* per meal of soup, meat, and vegetable. The latter naturally is a separate course, a substantial dish, properly cooked, not a little greenstuff boiled in water as we too often see in England. The principle now adopted is to encourage all the children, whether poor or not, to eat their meals together. A child may bring his own food with him from home but it is never so cheap and is always cold and rarely so good as the meal provided by the canteen. Therefore both children and parents prefer the canteen dinner, but the children who are not content with water bring their own wine or beer in bottles. Even the poorest children generally manage to mix a little wine with their water, particularly now that recent legislation in favour of hygienic drinks has reduced the retail cost of wine to 2*d.* per bottle and even less. From the very first the greatest care has been taken not to allow any loss of dignity to arise from the free feeding. The fundamental principle of the whole management is the absolute innocence of the children. They cannot be expected to pay. Their parents may be at fault; if so, there is only the greater reason to shelter the children and to try to preserve in them that sense of self-respect which might so easily be wrecked by their parents' bad conduct. Each child is called upon to pay 1½*d.* per day for his meal and receives in exchange a check or ticket. Sometimes this payment is effected in a small office, one child entering at a time. All receive a ticket for their dinner and only the person who gives the ticket knows who have paid and who have not. The parents of those who do not pay are visited. A full inquiry is made as to their condition and if they are poor they are put on the free list.

Of course it is easy to see that such a system might lead to much abuse. If the father is at work and has only one or two children the gratuity is refused. It is never refused to widows or workers with large families. To this I objected that the father, though earning high wages, might squander them in dissipation and starve his family. Was it not encouraging vice to feed his children? Or, again, others were clever in shamming poverty and to feed their children encouraged their hypocrisy and their lying propensities. All these and many other objections were met with the one simple, all dominating reply: "The children must be fed." There were methods of investigation; pressure was brought to bear on the parents. The parents or guardians of every child fed gratuitously were called upon and full investigations were made. Friends and witnesses and their employers were also seen when necessary. There was no objection to the show of some severity towards unworthy parents but the child was held sacred. In no case was the child to be humiliated or troubled in any way and on no pretext whatsoever should the food he needed be refused. Besides, there were various categories of gratuity. Persons who could not afford the 1½*d.* saved their dignity by paying a 1*d.* or only a ½*d.* per day. Nevertheless, in the poor quarters it is in the majority of cases of no use insisting on payment. The children arrive at 8.30 A.M. However poor their parents they generally have had something to eat before starting. Nevertheless there are some extreme cases of poverty, and then a piece of bread is given at the school when the starving child arrives. But this is altogether exceptional. It is at 11.30 A.M. that the mid-day warm meal is given. The children leave school at 4 P.M. and then they are supposed to dine with their parents in the evening. But to many of them it is the mid-day French breakfast that they get at school which constitutes their only satisfactory meal. A few children, however, cannot go home at 4 P.M. as their parents are out working. These are allowed to remain on the school premises till 7 P.M. where they play and prepare their lessons. Then they are given what is called a *goûté*, a sort of "snack," a little bread and butter or jam. Such is the full scope of the feeding undertaken by the school funds though all that is outside the 15 centimes midday meal is exceptional. How far the feeding is gratuitous varies according to the district. At the Eppinette district only 20 per cent. of the children pay for their meals. At Batignolles the proportion is 40 per cent. and in the wealthiest quarters of Paris as many as from 60 to 70 per cent. of the school children pay for their midday repast. The school funds, in so far as they depend on voluntary contributions, could not feed all these children and during the last three years the Paris municipal council has given to the various school funds of the capital subventions amounting to £40,000.

Such is the general principle on which the system works. Each locality manages its own affairs and is assisted by subventions from the centre and there is emulation between the various funds. It is now only necessary to add a few words as to the canteens themselves. They are object lessons in cleanliness and in simple but refined cooking. The meat is weighed after it has been cooked, the bone and fat being removed; then the younger children get 20 grammes and the older children 30 grammes of cooked meat. The *menu* is, generally speaking, somewhat as follows. Three days a week there is *bouillon gras*, a delicacy unknown in England, as no ordinary English person will take the trouble to put the proper proportion of flavouring herbs and vegetables to the beef. Only twice a week is the boiled beef with which the soup has been made given for the second course. As this meat is lighter than roast meat care is taken to supply for the third course the most substantial vegetables—namely, lentils or haricot beans. What a difference it would make if in England the people knew how to cook these highly nutritious vegetables. At one of the canteens I watched and inquired as to the process. First some onions are fried in good grease, in preference the melted fat of pork or veal. Then some thyme and some laurel leaves are added with "just a suspicion" of garlic. The haricot beans or lentils that have been soaking in water all night are placed over this savoury sauce. Its fat counteracts their dryness and the aroma of the herbs, onions, and garlic confers an appetising flavour. On three days a week roast beef, pork, veal, or mutton is given, preceded by a tasty vegetable soup and followed by a dish of mashed potatoes, or of maccaroni cheese, or of rice and milk, all well flavoured, well cooked, and of excellent quality. Such is the three-halfpenny meal of three courses provided alike to the poor and the well-to-do children attending the primary schools of Paris. But this is not all. The medical officers who examine the children may prescribe larger portions where necessary and quite a number of weakly children have cod-liver oil given to them in winter and syrup of iodide of iron or phosphate of lime in summer.

If the cooking is refined some attempt is also made to refine the manners of the children. So as not to dirty their clothes they are taught to use serviettes, and, generally speaking, the masters or mistresses pay their 1½*d.* and take their midday meal with the children, eating exactly the same thing. This example gives confidence and does much good. It is also a very effective way of controlling the cooking. Thus we have the hopeful spectacle of what in England would be pauper children sitting side by side with other children who are in much better circumstances and eating simple but refined food at the same table as gentlemen or lady teachers who have won their university degrees. Then, so that the poorer children should not be looked down upon, care is taken not only to conceal the fact that they are unable to pay for the meal but out of the school fund simple articles of clothing are given them. These poor children do not, therefore, look shabby and thus their self-respect is maintained. Is there not in all this the making of a healthy people and a strong race? Can we in England afford to ignore the example here given? Is it not safe to argue, as the managers of the school funds in Paris argue, that whatever the faults of the parents, whatever may be done to the parents, still the children are blameless? Therefore, and without hesitation, if we would preserve the race, without the loss of a moment and without making a single exception, every hungry child must be fed. Economists, politicians, and others were left to discuss and to squabble over the rights and wrongs of the case, the school funds of Paris, encouraged by the municipality, commenced by building the kitchens, cooking the meals, and somehow or other things fell into their places, and to-day everyone is quite content and some not a little proud of the good that has been done.

WIGAN MEDICAL SOCIETY.—A meeting of this society was held on Sept. 1st, Mr. J. Chronnell, the President, being in the chair. There was a good attendance of members. A vote of condolence was passed to Lady Banks and her son in their recent bereavement. The honorary secretary (Mr. W. Berry) read a paper on Death Certification. An interesting discussion followed.

LUNATICS IN WORKHOUSES

(FROM A CORRESPONDENT)

IN an article entitled "The Muddle of the Law of Lunacy" which appeared in THE LANCET of Feb 27th, 1904, p 612, attention was drawn to the difficulties which surround the admission of persons of unsound mind into a workhouse as a preliminary to their examination by a magistrate Assuming that these difficulties have been in some way evaded it may prove that the form of mental defect exhibited by the patient is one which the law regards as capable of being suitably dealt with in the workhouse itself, and it may, therefore, be not without profit to consider what are the conditions under which persons may be so detained for care and treatment

The lunatics who become more or less permanent occupants of workhouses are, in the [illegible]
mental disability takes the
elderly dements, and (3) [illegible]
of age. All these may reach the workhouse either directly from the outside world or by transfer from an asylum for acute cases under Sections 25 and 26 of the Lunacy Act, 1890 This latter group does not usually cause much trouble as the procedure required by the Act is fairly simple, but the construction of Section 24 of the Act, which controls the detention of cases of the former kind, has provided innumerable themes for discussion Subsections (3), (4), and (5) of Section 24 are the ones with which we are here chiefly concerned and it is proposed to indicate some points of interest which the attempt to apply them has brought out Several opinions given by the Commissioners in Lunacy, which have not previously been made public, will be incidentally referred to As will be seen from a perusal of Subsection (4) two medical certificates are required One of these is in the familiar form numbered 8 in the Schedule to the Act and may be given by any legally qualified medical practitioner, provided that he is not a medical officer of the workhouse concerned, while the other must be by the medical offic
state (1) that the person wh
lunatic, (2) that he is of a
workhouse, and (3) that there
and suitable accommodation for the lunatic This second certificate, which is in the form numbered 10 in the Schedule to the Act, differs also from the former one in that it has no place for the "facts communicated by others" of form 8 These certificates accompany and "support" the application for a detention order which is made to "a justice having jurisdiction in the place where the workhouse is situate" and their chronological relation to each other and to the application is worth a moment's consideration In a case recently submitted to the Commissioners in Lunacy for their opinion the justice had made an order for detention which was dated 16 days after the date of the medical certificates This order the Commissioners declared to be invalid and they directed that the medical officer of the workhouse in which the patient was being detained should take steps to obtain a new order from a justice The limit of time between the giving of the certificate by the medical officer of the workhouse and the making of the order by the justice is 14 days, exclusive of the day on which the certificate was given This may be assumed from the fact that the certificate upon which the justice proceeds is in the same form as the one by means of which the medical officer, acting under Section 24 (2), is enabled on his own responsibility to detain the lunatic for 14 days In the opinion of the Commissioners the order in which the medical certificates are given is of no consequence, the order in which they are mentioned in Section 24 (4) and referred to above being apparently merely accidental This matter was brought before the notice of the Commissioners in May last in some cases where the outside practitioner had certified first, and they replied that they did not think "that the fact of the certificate, given by the medical officer of the workhouse under the provisions of Section 24 (2) of the Lunacy Act, 1890, being dated after the date of the certificate given by the outside medical practitioner would cause an order made upon these two certificates to be invalid" There is, however, a serious objection to such an arrangement which medical men who may be invited to give certificates would do well to bear in mind, and it is to be found in the fact that whereas the certificate given by the *workhouse* medical officer is alone sufficient authority for detaining the patient for not more than 14 days, that *given* by the *outside practitioner* has by itself no such effect It would indeed appear that in the cases alluded to the patients were illegally detained in the workhouse for several days and, if any of them had known the circumstances and had been of a litigious disposition, as paupers frequently are, they might have caused those concerned a considerable amount of trouble

The words "not being an officer of the workhouse," as applied in Section 24 (4) and (5) to the outside practitioner, have been prolific in disputes As they stand the words do not necessarily exclude all the medical officers of the union or parish to which the workhouse belongs, thus it seems legitimate for a district medical officer to certify in conjunction with the workhouse medical officer and to receive payment for so doing In London, especially, the position is complicated by the fact that the sick wards of the workhouse may be aggregated into a distinct institution, the "workhouse infirmary," which may be situated at a distance from the workhouse proper and may have a separate medical officer Accommodation for lunatics may be provided either at the workhouse or at the infirmary and the medical officer of the establishment selected is, for the purposes of the Lunacy Act, the "medical officer of the workhouse" The question then arises whether the medical officer of the branch where the lunatics are not confined is competent to give the certificate required from a "medical practitioner not being an officer of the workhouse" A recent
ows, will serve
the infirmary,
[illegible] on adjoining
plots of land and the medical officer of the workhouse was also medical superintendent of the infirmary. Acting in his
the gentleman
sistant medical
[illegible] of the outside
practitioner It was attempted to justify this proceeding by the contention that the assistant at the infirmary occasionally took duty for his senior at the workhouse and that it has been held that a workhouse medical officer's deputy may properly give certificates as an outside practitioner under Section 2. is,
indeed, to be found in [illegible]
of lunacy, but it is to b [illegible] a
case decided in a court of law but on an opinion given, in reply to a correspondent, in the *Justice of the Peace* for April, 1891 More important still, it has no bearing on the point at issue since the deputy in question is one appointed by the medical officer in accordance with Article 199 of the General Order of the Local Government Board, Dec 8th, 1847, and Article 200 of the General Consolidated Order of July 24th, 1847, and such a deputy is not an officer of the workhouse or of the guardians An appeal was made to the Commissioners in Lunacy and they held that in this instance, at any rate, the infirmary was part of the workhouse and that "the assistant medical officer referred to could not sign the certificate in question under the hand of a medical practitioner not being an officer of the workhouse" In connexion with this branch of the subject it may also be noted that there appears to be no reason why in suitable cases one medical officer's certificate should not refer to several patients provided these are properly distinguished and enumerated The question as to whether or not it is permissible for a guardian who is a member of the medical profession to sign the certificate of the outside practitioner and receive pay for so doing has been recently raised Such an arrangement appears open to criticism In a note in Glen's Poor law Orders under Article 177 of the General Consolidated Orders, dated July 24th, 1847, which deals with certain payments for special medical services, the opinion is expressed that "as a general rule it is thought not desirable that a medical man who is a guardian of the union should give certificates under this Article in his own union" and this principle appears to be one which the Local Government Board would approve The view of the Commissioners in Lunacy is set forth in the reply to a communication which in June last was made to them in regard to a case where a guardian had given a medical certificate in support of the application for a detention order It is to the effect that "a member of a board of guardians is not an officer of the workhouse within the meaning of

Section 24 (4) of the Lunacy Act, 1890." One must infer, therefore, that an order for detention obtained in such circumstances is valid.

Section 24 (5) deals with the question of the fees payable for medical certificates. "The guardians of the union to which the workhouse belongs shall pay such reasonable remuneration as they think fit to the medical practitioner who, not being an officer of the workhouse, examines a person for the purpose of a certificate under this section." No fee, that is, goes to the workhouse medical officer. This circumstance has afforded material for numerous speculations which it would be idle to go into; the medical officer may adopt whichever affords him *the most consolation*. But even for the outside practitioner there are pitfalls. A medical man was recently asked by a relieving officer of one of the great London unions to certify as to the mental condition of certain patients whom it was proposed to detain under Section 24. No stipulation was made as to the fee to be charged and a sum of one guinea for each of the half dozen cases was demanded. The guardians, however, declined to pay more than three guineas on the ground that the decision as to the amount rested solely with them and in this instance their action was not contested. Perhaps for this reason they have since been endeavouring to get the certificates at 5*s*. It is probable that the guardians' powers under the section are not so extensive as they suppose. In April, 1902, the issue was raised in an action brought in the Chertsey county court before his honour Judge Lushington. A claim for seven guineas was made for certifying seven imbeciles at the Chertsey workhouse and the guardians refused to pay more than three. The medical man therefore sued the guardians for the full amount and it was contended on his behalf, and admitted by the opposing counsel, that the word "reasonable" in the section only determined the question as between the guardians and the Local Government Board in respect of a possible surcharge. The fee of one guinea was shown to be a customary one and judgment was given for the plaintiff for the amount claimed with costs on the higher scale. There seems to be no very good reason why the fee payable should not have been fixed by the justice who makes the order for detention, even though the cases falling under Section 24 differ from those in which summary reception orders are made, in that the justice does not himself call in the medical practitioner who certifies.

The machinery of Section 24 is usually set in motion by a relieving officer who, according to Subsection (4), *may* make application for a detention order. From the use of the word "may" it is to be inferred that if circumstances rendered such a course convenient the medical officer or the master of the workhouse might take the initiative. It is worth noting also that under this section the application need not be in writing, and, further, that it is not necessary for the justice who makes the detention order to see the patient in respect of whom it is made. Section 5 of the Lunacy Act, 1891, requires that the medical certificates, given under Section 24 of the Act of 1890, should be attached to the order and the certificates should be laid before the Commissioners in Lunacy on the occasion of their next visit to the workhouse.

In London the care of "lunatics in workhouses" devolves largely upon the Metropolitan Asylums Board. The institutions for lunatics controlled by that body are not, however, "asylums" within the meaning of the Lunacy Act, 1890. That Act indeed specifically includes the asylums of the Board under the term "workhouses" (cf. Section 341), and in so far as the Act applies to them the detention of lunatics is effected through the agency of Section 24 as at other workhouses. The Lunacy Acts, however, do not constitute the sole controlling authority, there are numerous orders of the Local Government Board which have to be complied with. In consequence of this the procedure laid down for obtaining the admission of patients to these asylums is decidedly complicated as compared with that followed when persons are removed to county and borough asylums and calls for the preparation of the documents enumerated below when the lunatic is over 16 years of age.

1. Application by a relieving officer to a justice having jurisdiction in the place where the workhouse is situate for an order for the detention of the lunatic in the workhouse of the parish or union to which he is chargeable.
2. Statement of particulars by the relieving officer to accompany the application.
3. Certificate by the medical officer of the workhouse under Section 24 of the Lunacy Act, 1890.
4. Certificate by an outside medical practitioner under the same section.
5. Order for detention made by the justice under the same section.
6. Order for the admission of the patient to one of the asylums of the Metropolitan Asylums Board signed by the clerk to the guardians of the parish or union from which the patient proceeds. At the present time the Board's asylum at Tooting Bec is the only one which directly admits patients of the class here referred to.
7. Certificate by a medical officer of the parish or union to which the patient is chargeable to the effect that the patient is "a chronic and harmless lunatic, idiot, or imbecile" suitable and physically fit for removal. This certificate differs in several respects from the certificate referred to in paragraph 3 *supra* though its general purport is the same and it is usually given by the same medical officer. The chief difference seems to be that it may include "facts communicated by others."
8. A report "signed by the chairman or vice-chairman of the board of guardians of the parish or union to which the pauper is chargeable or by some member of the visiting committee of such board of guardians."
9. A second medical certificate as to the patient's bodily condition is frequently advisable for the following reasons. The admission order mentioned in paragraph 6 *supra* is, according to the Order of the Local Government Board of Feb. 10th, 1875, which regulates admissions to the asylums here considered, to be signed by the clerk by direction of the board of guardians, and it is further laid down that "such direction shall not be given until the certificate and report above mentioned (cf. 7 and 8 *supra*) have been laid before the board of guardians." The medical certificate must therefore be anterior in date to the admission order and as this is available for seven days it sometimes happens that the statement of the medical officer as to the patient's physical fitness for removal has been made so long before the removal to the asylum actually takes place as to afford no satisfactory evidence about the patient's condition at that time.

The detention order mentioned in paragraph 5 *supra* directs the detention of the patient in the workhouse in regard to which the medical officer has certified that there is suitable accommodation and would not, on the face of it, be a valid authority for detaining the patient in one of the asylums of the Metropolitan Asylums Board. This difficulty is, however, met by Section 4 (2) of the Lunacy Act of 1891 which directs that no further certificate or order shall be required "upon the transfer from a workhouse to an asylum provided under the Metropolitan Poor Act, 1867, of a lunatic, with regard to whom a certificate or order under the said Section 24 [i.e., of the Lunacy Act, 1890] made while he was in the workhouse is in force." It may be noted here that the medical certificate mentioned in paragraph 7 *supra* is required for the admission, not for the detention, of the patient and is therefore not excluded by the Act of 1891, however superfluous it may, on its own merits, appear. In connexion with paragraph 1 *supra* should be read Section 24 (7) of the Lunacy Act, 1890, which enables an officer of the asylum to act as a relieving officer in matters relating to paupers in the asylum.

A modification of the above procedure is adopted in the case of children under 16 years of age. No order for detention is obtained from a justice, apparently on the ground that in these instances the interests of all concerned are sufficiently safeguarded by the principle that the detention of a lunatic is justifiable at common law if necessary for his safety or the safety of others. The force of the objection raised in paragraph 9 *supra*, to having the medical certificate as to fitness for removal given several days before such removal, is recognised in this instance by the Local Government Board which, by an Order dated May 5th, 1890, requires that the certificate should be given on the day of the removal or on the day immediately preceding. As the admission order in these cases is available for 14 days both the certificates, numbered 7 and 9 above, will be usually required. When the child reaches the age of 16 years an order for detention under Section 24 of the Act of 1890 is obtained, but there is here a slight departure from the course prescribed in the Act, since by Section 4 (2) of the Lunacy Act, 1891, the medical superintendent is not required to certify that the asylum has sufficient accommodation for the proper care and treatment of the case.

Patients may be transferred to one of the asylums of the Metropolitan Asylums Board, as to a workhouse, under

Section 25 of the Act of 1890 and the Local Government Board, by an Order dated Jan 30th, 1891 made special provision for the admission of such cases This consisted chiefly in dispensing with the certificate and report alluded to above in paragraphs 7 and 8 *No provision, however* seems to be made for dealing with such cases of chronic insanity as are referred to in Section 26 of the Act of 1890 as suitable for detention in a workhouse

IRELAND

(FROM OUR OWN CORRESPONDENTS)

Milk in Dublin

AT a meeting of the board of guardians of the South Dublin Union held on Sept 7th a motion was adopted with reference to the great increase of infant mortality in Dublin due to the adulteration of milk and other causes Sir Charles Cameron and Professor E J McWeeney have stated that the milk from the town dairies is better and more trustworthy than that brought in from small farms in the country As to the infantile mortality of the city, the chief medical officer of health said that it was 150 per 1000 of the population, being below the average of the largest 76 English towns but higher than that of London On being asked to suggest a remedy he expressed the opinion that the whole of the supervision of dairies and cowsheds should be under the veterinary department of the State which would employ a staff of veterinary inspectors to examine the condition *of the cows and the hygienic conditions under which they* were kept Professor McWeeney, when asked as to the means for obtaining pure milk for young children said that the law might be modified so that establishments might not be registered as dairies unless they complied with certain conditions as regards ventilation air space, and cleanliness At present anyone who wished to sell milk could have his premises registered He was in favour of licensing rather than registering, stringent conditions to be imposed on licensees as regards the state of their premises cowsheds byres &c , and especially in respect to the arrangements for scalding their milk vessels In respect to a suitable method of adjudging punishment to those who sell under the title "milk ' a watered skimmed, or separated substitute Sir Charles Cameron is not in favour of imprisonment or of denouncing the convicted dairy proprietor by placing a placard over his door, for magistrates have generally much difficulty in such cases in bringing home the guilt to any individual What he proposes is shortly as follows The Act defines the legal standard of milk—namely, that it must contain 8½ per cent of non fatty solids and 3 per cent of fats Such legalised milk is poor and he would advise prosecution in all cases in which such milk was sold with punishment, no matter what excuse was made by the dairy proprietor On the other hand the 'average ' standard is 9 per cent of non fatty
and punishment should not
shown by the defendant tha
standard from poor feeding of the cows, while it was still as it came from the cow and unadulterated Under the present law no prosecution can take place until the milk is found by the analyst to be under the legal standard, although it may possibly be watered or lowered much below the average standard of good milk

A Fine Old Poor law Medical Officer

The grievances of the Poor law medical officers of Ireland do not always shorten their lives Dr Thomas Woods of Parsonstown has been the medical attendant at the fever hospital and dispensary of Parsonstown union for 40 years He is close on 90 years of age a clever man, an ardent cyclist, with his faculties entirely unimpaired The largest pension under the Poor law was voted to him the other day and it was well deserved, for, as was stated by Mr Michael Reddy, M P , J P , during all his years of service no complaint was ever made against him There seems a sort of bathos in the chairman's announcement that the amount of his pension will be slightly over £200 per annum for both his appointments

Queen s College, Belfast

For the chair of pathology in Queen s College, Belfast which was endowed by a Belfast merchant the late Sir James Musgrave, Bart , and which is now vacant, the medical profession in Ulster are strongly in favour of the appointment of Dr Thomas Houston who has for the past seven years devoted himself specially to the subject and has been an assistant of the professor who has just resigned As *an indication of the local feeling it is stated that a memorial* is to be presented to the president of Queen s College which
dical staff of all the Belfast
of Dr Houston and his former
in his favour Dr Houston was
a most distinguished student of the Belfast Medical School, in which he is now a lecturer

The Belfast Board of Guardians

The Local Government Board has approved of the proposal of the Belfast guardians to acquire the premises known as the Abbey, Whiteabbey, with a view of converting them into an additional workhouse and it has written saying that it will await the further action of the guardians in the matter When a letter to this effect was read at a meeting of the board of guardians on Sept 6th it led to a wild scene There seems to be great opposition to the scheme on the part of some of the guardians

Anti vaccinationists

The Local Government Board has written to the Belfast *guardians commanding them to* enforce the Vaccination Act in the union As a result one of the guardians, a working-man candidate for Parliamentary honours, is to be prosecuted for non compliance with the Act

Health of Belfast

Between July 17th and August 20th 202 cases of zymotic *disease were notified in* Belfast including 51 of typhoid fever 60 of simple continued fever, 49 of scarlet fever, 27 of erysipelas eight of diphtheria, two each of typhus fever small pox and puerperal fever, and one of membranous croup The small pox epidemic is dying out there have been since the outbreak of the disease 105 patients treated in the small pox hospital, of whom 98 have been discharged convalescent three have died, and four remain in hospital 344 persons were isolated as 'contacts " and there are still nine The death rate was 17 2 per 1000 In reference to the sanatorium for consumptives it was reported at a meeting of the council on Sept 6th that a conference was to be held between a subcommittee of the public health committee and some members of the Forster Green Consumption Hospital board of management the idea being that this hospital should be taken over and developed by the corporation to prevent overlapping

Small pox and Typhoid Fever in Armagh

There are 27 cases of small pox in the isolation sheds and three cases of typhoid fever in the fever hospital at Armagh

Treatment of Consumption in Londonderry

The visiting committee of the guardians of the Londonderry union has recommended that a shed should be erected in the yard attached to the infirmary for the treatment of consumptive patients at a cost of £10, but at the weekly meeting of the guardians on Sept 10th it was decided by a vote of 12 to 6, not to do anything one excuse being the expense !

Sept 13th

PARIS

(FROM OUR OWN CORRESPONDENT)

The Overcrowding of the Medical Profession

LAST week I gave your readers some account of the overcrowding of the medical profession, but bad as it is it is no worse now than in former years, for instance according to an annual for the year 1825 there were in Paris 716 *doctors in medicine*, 30 *officiers de santé*, and 165 surgeons —in all 911—for a population of 717 212 To-day the population is 3 000 000—that is to say, four times as great—and the proportional number of medical men therefore ought to be four times more—namely, 3644 It is, however, not so big, for, as a matter of fact, there are in Paris at the present time only 3427 physicians and surgeons, but, on *the other hand*, the relative increase in the numbers of *pharmaciens* is very much greater In 1825 these numbered 252, which number should be, in proportion to the population, 1000 in 1904 but really the number is 1290 The class which has most increased since 1825 is that which includes midwives and dentists. In 1825 there were 26 midwives and 55 dentists. In 1904 there are 988 midwives and 638 dentists.

Instruction in Tropical Medicine.

There are at the present time in France three institutes of colonial medicine which were founded in the following order: the first at Marseilles, the second at Bordeaux, and the third at Paris. The course of instruction at the last-named covers about two and a half months and the session of 1904 will commence on Oct. 17th and will finish about Christmas. Theoretical instruction and laboratory demonstrations are given at the Faculty of Medicine and clinical instruction at the Hospital of Auteuil. Theoretical instruction and laboratory demonstrations take place every weekday afternoon except Mondays at the practical school. Clinical instruction is given twice a week at 10 o'clock in the morning at the Auteuil Hospital. During the first year of its existence the Paris school had 20 students and during the second year there were 25, of whom 13 were foreigners. The Ministerial Decree dated 1901 approved a resolution of the University Council of Bordeaux that a diploma in colonial medicine of this University should be granted. The municipality and the Chamber of Commerce of Bordeaux both contributed to the expenses of this diploma. During the last period of instruction at Bordeaux, which began on Nov. 16th, 1903, and finished on Jan. 30th, 1904, there were 24 students, of whom 15 who were not sufficiently instructed or had not yet taken their diplomas of doctor in medicine did not go up for the examinations. Nine students, of whom one was a foreigner, obtained the diploma in colonial medicine of the University of Bordeaux. The coming term of instruction will begin next November and will finish in February, 1905. The only question now remaining is as to what occupation shall be found for the young medical men who are sent out from these institutes of colonial medicine. If possible something should be done to assure the diplomates of colonial schools that without infringing the legitimate rights of the military medical men attached to the colonial troops they should be found places as medical officers to consulates or medical officers of civil establishments in the colonies. Certain commercial companies throughout the colonies engage medical men at very fair salaries. At the last colonial congress a motion was passed to be submitted to the Government authorities that medical men might be given administrative functions in the French colonies, but no answer has been returned to this resolution.

Cryoscopy of Milk.

At the meeting of the Academy of Sciences which was held on August 29th M. Guiraud and M. Lasserre communicated the results of some researches which they had recently made upon the state of health of a milk-giving mammal as to the freezing point of milk. The freezing point of pure milk taken at the farm is constant and lies between $-0{\cdot}5°$ and $-0{\cdot}6°$ C. The artificial addition of water always gave results which were in a constant ratio. The state of health of the animal providing the milk has a definite influence upon the freezing point. All milks having a pathological origin, particularly the milk of tuberculous cows, showed a freezing point which was very sensibly lower than that of normal milk.

The International Congress of Tuberculosis.

At this Congress, which will meet in Paris from Oct. 2nd to 7th, 1905, three subjects in each section will be discussed. Three members of the Congress are appointed to open the discussion on each question and one of them must be French. The national foreign committees are already nominating who shall represent them and the French ones have already been appointed. The Pathological Section, of which the president is Professor Lannelongue, has chosen the three following questions: (1) Treatment of Lupus by New Methods, to be opened on behalf of France by M. Jeanselme and M. Chatin; (2) the Early Diagnosis of Tuberculosis by New Methods, to be opened on behalf of France by M. Achat; and (3) the Comparative Study of Tuberculous Diseases, to be opened on behalf of France by Professor Arloing of Lyons. The Social Section, which will be presided over by Professor Landouzy, will discuss the following: (1) the Etiological Factors of Tuberculosis, the opener of the discussion on behalf of France being M. Romme; (2) the Part played by Dispensaries and Sanatoriums in the Fight against Tuberculosis, to be opened on behalf of France by M. Courtois-Suffit; and (3) Insurance against Tuberculosis, to be opened by M. Edouard Fuster.

Fees paid to a Medical Man for Treatment at a Hospital.

The Juge de Paix of the canton of Redon has just delivered an interesting judgment. A doctor of medicine demanded that M. X., a builder, should be compelled to pay him 250 francs for medical attendance which he had given to a workman who was injured while in the employ of M. X. The court condemned M. X. to pay the medical man the sum demanded—that is to say, 250 francs—on the ground that medical men attached to hospitals are not compelled to give gratuitous attendance to hospital patients unless they are admitted as indigent persons and that it cannot be said that workmen who meet with accidents during their employment are to be classed as indigents. The court also found that the sum of 250 francs was by no means too high.

Sept. 13th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Death of Professor Kobner.

Professor Heinrich Köbner, who died in Berlin on Sept. 3rd, was one of the leading specialists on diseases of the skin in Germany. He was born in 1838 at Breslau where he received his medical education and took the degree of M.D. in 1860. He first became an assistant at the Breslau Physiological Institution under the celebrated Professor Heidenhain and afterwards, according to the custom of the time, went to Vienna and Paris where he began to study skin diseases. In Vienna as well as in Paris this special branch of medicine was already receiving attention and instruction could be obtained from competent teachers, whereas in Prussia there was no educational centre except Berlin where dermatology could be properly studied, because diseases of the skin formed an extra subject in the medical or surgical clinics respectively and on that account were rather neglected. When in 1862 Professor Köbner settled in Breslau he opened a private clinic for diseases of the skin where the first courses and lectures in dermatology in Germany were held. In 1869 he was recognised as *privat-docent* and in 1872 was promoted to be extraordinary professor. In 1876 an official dermatological clinic was established by the university and Professor Köbner was appointed director but unfortunately the state of his health soon afterwards compelled him to leave Breslau and to pass some time in a southern climate. Eventually he settled in Berlin where he resided till his death. While studying in Paris he was specially interested in sycosis and his subsequent original work included researches on this disease, on lepra, on psoriasis, on tuberculosis of the skin, and on new growths affecting the skin. His extensive knowledge not only of his own special branch but also of almost every branch of medicine obtained for him one of the largest consulting practices in Berlin and he was celebrated for the accuracy of his diagnosis, even in the most obscure cases. Two years ago he retired from practice on account of failing health but he occasionally attended the meetings of the Dermatological Society, of which he was the founder.

The Title of Professor.

A singular question relative to medical titles has recently arisen in Hamburg. This free city (and the two other free cities, Bremen and Lübeck, likewise) are the only States of the German Empire where honorific titles are rare and the manifold titular distinctions possessed by Government officials and prominent citizens in the other German States do not exist either in medical or in any other circles. Hamburg, which has no sovereign ruler (the Emperor is not to be regarded as sovereign of the German States with the exception of Prussia) but is governed by its Senate, has hitherto abstained from the use of titles and decorations which are of so great an importance throughout the rest of Germany; even men like the celebrated Dr. Kümmel, the chief surgeon to the great Eppendorf Hospital, have only the title of Doctor like any general practitioner of the city of Hamburg. There is no medical councillor or privy medical councillor or sanitary councillor or any similar appellation. A medical man is termed a "doctor" and when he has a government appointment he may be called "medical officer to the port" or "district medical officer of health" or "chief physician to the hospital' but has no honorary title at all This state of things, so natural to English people, is evidently a matter of grievance to some leading Hamburg medical men who may possibly feel uncomfortable when they meet their professional brethren of the other German States who are provided with titles A combination of them, including hospital physicians and surgeons, specialists, and others, have therefore petitioned the Senate that the title of Professor may be granted to those who deliver lectures They draw attention to the fact that regular courses of post graduate lectures, though not of an official character have been delivered in Hamburg for many years They say that post graduate study, as in Prussia, should be recognised by the State and that Hamburg by its excellent hospitals and other medical institutions may become the seat of a medical school like Cologne The teachers of the prospective school and meanwhile those of the unofficial post graduate lectures should have the title of Professor granted to them which, as they explain, is the usual title in Germany for medical men engaged in academical teaching The demands of the above combination have, however, led to a protest on behalf of the medical profession, the majority of whom do not wish the old customs of Hamburg to be abandoned and are, moreover, afraid that the titled medical men may be regarded by the public as more competent than others This question has caused some discussion from both sides in the medical and lay press but the Senate has not yet decided the matter

Sept 13th

NEW YORK

(FROM OUR OWN CORRESPONDENT)

Mosquitoes in New Jersey

FOR the past two years strong efforts have been made by the health authorities of New Jersey to banish, or at least to decrease the number of mosquitoes in that State Unfortunately, endeavours in this direction have not been attended with a large measure of success Drainage has been the measure most widely relied upon but it would seem that the scheme has failed probably because it was not conducted in a sufficiently thorough manner In Newark, New Jersey, for instance a city partly surrounded by marshes, the sum of $4500 had been appropriated to carry out a system of draining The result has been very disappointing for the ditching, instead of draining off the water, has converted the swamp into a huge pond and matters, so far as mosquitoes are concerned, have been worse than ever before Mosquitoes in the vicinity of Newark have been prevalent during the present summer and from all parts of New Jersey comes a similar story The truth undoubtedly is that only partial measures have been adopted, whereas if mosquitoes are to be got rid of in a district a thorough system of drainage must be undertaken Of course, the expense will be heavy but the results will be commensurate with the money expended

Medical Exhibits at the World's Fair

The medical exhibits at the World's Fair are many and varied With the exception of those of the Marine Hospital Service and of the Medical Department of the Army and Navy, in the Government Building, they are all in the [illegible] exhibit is on the whole [illegible] to the medical sciences [illegible] most interesting features of this exhibit is the section given over to the exhibition of the Roentgen rays Six sections contain the main exhibition of the medical department, in each section one branch of the medical sciences being represented The surgical exhibit is arranged in two sections, one of which represents the Royal Surgical Clinic of Berlin and the other the Royal Surgical Clinic of Breslau A room adjoining the surgical section is devoted to the pathological exhibit A section is also set apart for the exhibit of internal medicine The entire German exhibition of medical sciences is remarkable for the thorough manner in which it has been conceived and carried out and reflects great credit upon those responsible for its arrangement

Medical Men and Politics in the United States

The question of medical men and politics is greatly exercising the minds of the profession in the United States As is generally the opinion in England, it is thought here by a large number of medical men that the practitioner should take no part in politics However, a change is apparent as regards this point of view and many influential medical men are now insisting that they should share in politics both for their own sakes and in the interests of the public at large The argument is advanced that in a great many ways the medical man is peculiarly well fitted to take part in politics He is educated, well read, and has especially good opportunities of judging human nature and is generally in a position to speak with authority on certain matters It is not argued that he should take so much an active part in politics as to influence votes Upon questions of public health and upon all matters concerning the health of the community as well as upon purely medical questions he is better adapted than members of any other class to pass an authoritative opinion In fact, much sickness might be avoided if the advice of medical men were asked and acted upon by municipalities and the Government It is further contended that the entrance of medical men into politics would tend to raise the tone of political life and to decrease the corruption so prevalent in politics nowadays The American Medical Association at its recent meeting at Atlantic City took cognisance of the matter and several of its more prominent members urged strongly that medical men should interest themselves in politics The vice president of the association indeed advocated the formation of a national department of health, represented by a physician at its head, who should be a member of the Cabinet

Typhoid Fever in the Borough of the Bronx

In that part of greater New York known as the Bronx a somewhat serious epidemic of typhoid fever has broken out A reservoir is being constructed there, working upon which are a large number of Italian labourers, and it is among these that the disease originated The Italians in New York are a constant menace to the public health owing to the insanitary conditions in which they live They herd together like cattle and have not the slightest rudiments of proper sanitation Fear is expressed that the present epidemic of typhoid fever in the Bronx may lead to a contamination of the water supply and attention is again drawn to the fact that there is no efficient system of filtration of the public water supply of New York Indeed, New York is one of the few large cities of the world that have not adopted modern filtration as a precautionary measure against water infection, although such methods have been urged times without number To state the case plainly, the metropolis of the United States, a large proportion of the inhabitants of which are dependent on a water shed badly protected, is content to run risks which can be easily obviated by modern science Physicians as a rule do not care to press the matter On occasions the medical journals will utter warnings The *New York Medical Record* has done so frequently The great stumbling block, however, to the carrying out of an efficient system of water filtration is the large primary cost For this reason all municipal administrations have fought shy of the matter

Death of Dr William R Pryor

Dr William R Pryor one of the best known physicians of New York city and professor of gynæcology in the New York Polyclinic Hospital since 1884, died on August 27th from pneumonia Dr Pryor, who was only 43 years of age, was considered among the best of the gynæcologists of America He was the son of Supreme Court Justice Roger A Pryor The deceased probably owed his death to his devotion to duty, as in addition to a large practice he gave much of his time to work amongst the poor

Sept 3rd

AUSTRALIA

(FROM OUR OWN CORRESPONDENT)

Bubonic Plague

A case of bubonic plague, the tenth since the beginning of the present outbreak, was reported in Sydney on August 3rd Three of these ten cases have proved fatal The staffs of men employed by the Board of Health and Sydney city council continue a persistent crusade against rats and still find infected rats among those destroyed No fresh cases have been reported from the other States

Sunderland. A number of gentlemen are also vice-presidents without a seat on the council unless specially elected.

Medico-Psychological Association of Great Britain and Ireland.—The next examination for the certificate in nursing and attending on the insane will be held on Monday, Nov. 7th. Candidates should obtain from the registrar, Dr. Alfred Miller, Hatton Asylum, Warwick, a schedule to be filled up, signed, and returned to him at least four weeks before the date fixed for the examination. Monday, Oct. 10th, will be the last day upon which, according to the rules, candidates can enter their names for the November examination.

BOOKS, ETC., RECEIVED.

Adlard and Son, Bartholomew-close, E.C.

The Differential Diagnosis of Syphilitic and Non-Syphilitic Affections of the Skin, including Tropical Diseases. A Survey for Medical Practitioners and Students. By George Pernet, Assistant to the Skin Department, University College Hospital, London. Price 6*s*. 6*d*. net.

Cassell and Company, Limited, London, Paris, New York, and Melbourne.

The Students' Handbook of Surgical Operations. By Sir Frederick Treves, Bart., K.C.V.O., C.B., LL.D., F.R.C.S., Sergeant Surgeon-in-Ordinary to H.M. the King, Surgeon-in-Ordinary to H.R.H. the Prince of Wales, Consulting Surgeon to the London Hospital. New edition, revised by the author and Jonathan Hutchinson, Jun., F.R.C.S., Surgeon to the London Hospital, Examiner in Surgery, Royal Army Medical Department. (Abridged from the Author's "Manual of Operative Surgery.") Price 7*s*. 6*d*.

Church Missionary House, Salisbury-square, E.C.

Preaching and Healing. The Report of the C.M.S. Medical Mission Auxiliary for 1903–04. Price not stated.

Furnival, W. J., Stone, Staffordshire.

Leadless Decorative Tiles, Faience, and Mosaic, comprising Notes and Excerpts on the History, Materials, Manufacture and Use of Ornamental Flooring Tiles, Ceramic Mosaic, and Decorative Tiles and Faience, with Complete Series of Recipes for Tile-bodies, and for Leadless Glazes and Art-Tile Enamels. By William James Furnival, Research Ceramist and Consulting Potter, Honours Medallist in Pottery and Porcelain, City and Guilds of London Institute. The work includes contributions by Stephen W. Bushell, Esq., M.D., C.M.G., C. Stanley Clarke, Esq., J. H. Marshall, Esq., and Ambrose Wood, Esq. Price not stated.

Hirschwald, August, Unter den Linden, 68, Berlin, N.W.

Die Entwickelung der Dermatologie in Berlin. Eine historische Skizze. Von Dr. Paul Richter, Specialarzt fur Hautkrankheiten in Berlin. Price M.1.

V. Internationaler Dermatologen-Kongress abgehalten in Berlin vom 12-17 September, 1904. Verhandlungen und Berichte. Herausgegeben von Sanitatsrat Dr. O. Rosenthal, General-Sekretär. I. Band. Price M.10.

Lehmann, J. F., Munchen.

Lehmann's Medizin. Handatlanten. Band V. Atlas und Grundriss der Haut-Krankheiten. Von Dr. Franz Mracek, k.k.o.ö. Professor fur Dermatologie u. Syphilis an der Universitat in Wien. Zweite vielfach verbesserte und erweitete Auflage. Price M.16.

Lemco, 4, Lloyd's-avenue, E.C.

Lemco Dishes for all Seasons. By Eva Tuite. Price 1*s*.

Murray, John, 50a, Albemarle-street, W.

Handbook of Physiology. By W. D. Halliburton, M.D., F.R.S., Professor of Physiology, King's College, London. Sixth edition. (Being the Nineteenth Edition of Kirkes' Physiology.) Price 15*s*. net.

Nature Teaching, based upon the General Principles of Agriculture. For the Use of Schools. By Francis Watts, B.Sc., F.I.C., F.C.S., Government Analytical and Agricultural Chemist, Leeward Islands, West Indies, and William G. Freeman, B.Sc., A.R.C.S., F.L.S., Superintendent of the Colonial Collections, Imperial Institute. Price 3*s*. 6*d*.

Saunders, W. B., and Company, 9, Henrietta-street, Covent-garden, W.C.

A Text-book of Pathology for Practitioners and Students. By Joseph McFarland, M.D., Professor of Pathology and Bacteriology in the Medico-Chirurgical College, Philadelphia. Price 21*s*. net.

Practical Materia Medica for Nurses. By Emily A. M. Stoney, Graduate of the Training School for Nurses, Lawrence, Mass. Second edition, thoroughly revised. Price 8*s*. net.

The Practical Application of the Röntgen Rays in Therapeutics and Diagnosis. By William Allen Pusey, A.M., M.D., Professor of Dermatology in the University of Illinois, and Eugene Wilson Caldwell, B.S., Director of the Edward N. Gibbs X-ray Laboratory, University and Bellevue Hospital Medical College, New York. Second edition, thoroughly revised and enlarged. Price 21*s*. net.

Skipper, Charles, and East, 49, Great Tower-street, E.C.

Statistical Tables of the Patients under Treatment in the Wards of St. Bartholomew's Hospital during 1903. By the Medical Registrars, H. Morley Fletcher, M.D. Cantab., F.R.C.P., J. H. Drysdale, M.D. Cantab., F.R.C.P., and the Surgical Registrar, R. C. Bailey, M.S. Lond., F.R.C.S. Price not stated.

Southern Surgical and Gynecological Association (Secretary, W. D. Haggard, Nashville, Tenn., U.S.A.).

Transactions of the Southern Surgical and Gynecological Association. Vol. XVI. Sixteenth Session, held at Atlanta, Georgia, Dec. 15th, 16th, and 17th, 1903. Edited by W. D. Haggard, M.D. Published by the Association. Price not stated.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to The Lancet *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

Duncan, J. D., M.B. Edin., has been appointed Medical Officer of the Arbroath Epidemic Hospital.

Hayne, Louis B., M.D., B.C. Cantab., has been appointed Honorary Medical Officer to Out-patients at the Harrogate Infirmary.

Hope, G. J. B., M.B. Edin., has been re-appointed Medical Officer of Health to the Scarborough Rural District Council.

Hunt, A. W. D., L.R.C.P. Lond., M.R.C.S. Eng., has been appointed Surgeon to the Loyal Crown Lodge of Oddfellows at Chagford (Devon).

Kirton, Martin A., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed Public Vaccinator for the No. 2 District by the Devonport Board of Guardians.

Levick, G. K., M.B. Lond., has been appointed Medical Officer of Health to the Havant Urban District Council.

Mostyn, Sydney G., M.B. Oxon., has been appointed Medical Officer of Health of South Shields.

Ryan, Richard P., F.R.C.S. Irel., has been appointed Public Vaccinator for the First District by the Devonport Board of Guardians.

Sayer, Thomas, M.R.C.S. Eng., L.R.C.P. Lond., has been appointed Medical Officer and Public Vaccinator for the Kirklington District of the Bedale Union and for the Pickhill District of the Thirsk Union; and has also been appointed Medical Officer of Health of Kirklington, Yorks.

Thompson, S. W., M.R.C.S. Eng., has been appointed Medical Officer of the Calvert-road Homes in the Greenwich Union.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

Banbury, Horton Infirmary.—House Surgeon. Salary £80 per annum, with board and residence.

Birkenhead Borough Hospital.—Junior Resident House Surgeon. Salary £80 and fees.

Birmingham, Aston Union Workhouse and Cottage Homes, Gravelly Hill.—Resident Assistant Medical Officer. Salary £120 per annum, with apartments, rations, and washing.

Cambridge, Addenbrooke's Hospital.—Assistant House Surgeon for six months. Salary at rate of £30 per annum, with board, lodging, and washing.

Central London Throat and Ear Hospital, Gray's Inn-road.—Second Assistant Anæsthetist.

City of London Hospital for Diseases of the Chest, Victoria Park, E.—Second House Physician for six months. Salary at rate of £30 per annum, with board, washing, and residence.

Croydon Union Infirmary, Mayday-road.—Resident Assistant Medical Superintendent and Dispenser. Salary £130 per annum, increasing to £160, with apartments, rations, and washing.

Dudley, Guest Hospital.—Assistant House Surgeon for six months. Salary £40 per annum, with residence, board, and washing.

Evelina Hospital for Sick Children, Southwark, S.E.—Eight Clinical Assistants.

Glasgow, University of.—One Examiner each in Chemistry, Physics, Physiology, Materia Medica and Therapeutics, and Pathology, salary £50 each; Examiner in Chemistry, salary £50 per annum; Examiner in Physics, salary £50 per annum; two Examiners each in Medicine (Systematic and Clinical) and Surgery (Systematic and Clinical), salary £60 each.

Halifax Union Poor-law Hospital.—Resident Medical Officer. Salary £120 per annum, with apartments, rations, and washing.

Hospital for Consumption and Diseases of the Chest, Brompton.—Resident House Physicians for six months. Honorarium of £25.

Hull Royal Infirmary.—House Surgeon, unmarried. Salary 80 guineas per annum, with board and apartments.

Kidderminster Infirmary and Children's Hospital.—House Surgeon, unmarried. Salary £120 per annum, increasing to £150, with rooms and attendance.

Kirkburton, near Huddersfield (Storthes Hall Asylum).—Assistant Medical Officer. Salary £140 per annum, with rooms, board, attendance, and washing.

Leith Hospital.—House Physician, Physician in the Out-door Department, and Assistant House Surgeon, all for six months.

Lincoln County Hospital.—Junior Male House Surgeon for six months. Honorarium of £25, with board, residence, and washing.

Assistant
um, with

Salary
£80, with board, residence, &c.
—Senior Physician and Junior

RAL.—Fourth Medical Assistant.
l, lodging, and washing.
AL FOR INFECTIOUS DISEASES.—
£100 per annum, rising to £150,
with board, lodging, &c.
'ant (female).
use Surgeon. Salary £60

Iouse Physician for six
rd, lodging, and washing.
CHEST, City-road, E.C.—
lary at rate of £60 per

ysician.
Marylebone-road, N.W.—

Resident
Salary £40
Iouse Sur-
E. Salary

Salary £60

a, S.W.—
vith board

WEST LONDON HOSPITAL, *Hammersmith-road, W.—Officer in X-Ray Department.*

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—Assistant House Surgeon for six months. Honorarium at the rate of £75 per annum, with board, lodging, and washing.

Births, Marriages, and Deaths.

BIRTHS.

n, the wife

Liverpool,

FAICHNIE.—On Sept. 3rd, at the Nursing Home, Churchfield road, Ealing, the wife of Major N. Faichnie, R.A.M.C., of twin daughters

GODDARD.—On August 21st, at Naval Hill, Bloemfontein Orange River Colony, the wife of Captain G. H. Goddard, R.A.M.C., of a son.

ght, the

of R J.

LESLIE.—On Sept. 5th, at Fairwater, Evesham, Worcestershire, the wife of L F. Leslie, M.R.C.S., L.R.C.P., of a son.

SAFFORD.—On August 24th, at Blindwood, Ranikhet, North-West Province, India, the wife of Captain Arthur H. Safford, R.A.M.C., of a daughter.

MARRIAGES.

Alice Frances L'Estrange, daughter of the late Mr. William W

Ielbourne,
tin, M.B.,
Iolmes.
h, Kersal,
m Smith,

iston, Bir-
) P.H., to
Norman

DEATHS.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

CASTOR OIL IN ANCIENT EGYPT.

M. Loret, who for many years has devoted himself to the study of the plants known to the ancient Egyptians and their pharmacopœia, has recently in the *Revue de Médecine* been discussing the hieroglyphic name of ricinus and the application made of it by their medical men. He shows that the plant they knew was the African and Arabian variety and that they utilised it for the production of oil and other purposes centuries before the Indian type of ricinus was known to the Greeks. Herodotus tells us that the Egyptians derived the oil from it by boiling the grains, whilst Dioscorides and other *classic authors only attribute a cold process of extraction to them.* It was used for medical remedies and lighting and anointing. Herodotus and Diodorus call the oil of ricinus χιχι, whilst Pliny and Dioscorides assign that title, which seems an Egyptian word, to the *plant. M. Loret proves that the Egyptian name was Tekem,* which Brugsch considered to be the olive; it really consists of two words first noticed in a Den

M. Loret in his paper then pro

Tekem in the Ebers medical

for medical history will be mu

medical papyrus acquired for t

because it is a sort of duplicate of the Ebers manuscript, though the list of diseases and remedies follows a somewhat different order. The comparison of the two treatises will, it is hoped, be made by Baron Dr Oefele, whose competence for the task is great. M. *Urbain Bouriant, the French Egyptologist, who for the last few years* bestowed all his energy upon the translation and explanation of a Coptic medical papyrus discovered at Meshaikh and now preserved in the French Archæological Institute at Cairo, died last year at the early age of 54 years During his illness he still continued working at his edition of the papyrus, and M. Pierre Bouriant writes that his relative *has left him such complete* notes and wise counsels concerning the manuscript that he can finish the work for him and place it upon his tomb "comme un hommage d'amour et de vénération."

A NEW ONE-TWELFTH INCH OBJECTIVE.

WE have received for trial a one-twelfth inch oil immersion lens made by Mr. Henry Gowlland, Selsey, Chichester, the cost of which is only £2 15*s*. We have submitted the lens to a thorough trial and are able to report most favourably upon it The definition is good, it admits plenty of light and affords a satisfactory field. It has one defect that, we think, *might be remedied without difficulty.* The lower milled head is too projecting, consequently when removing the lens from the microscope the adjustment of the constituent lenses is apt to be disturbed. We can recommend the lens as a thoroughly good one, although it can be obtained at a low price.

HOSPITALS AND DISPENSARIES.

To the Editors of THE LANCET.

SIRS,—About this time last year you were kind enough to give admission to a letter in which I made the suggestion that an alliance between the hospitals and the dispensaries (provident, charitable and semi-charitable, &c.) presented certain advantages. By this alliance the dispensaries would be *the primary public portals* to the hospitals, except in cases of accident, urgency, and perhaps those cases sent up by medical men The advantages which such a scheme presents are 1 Stoppage of leakage of hospital funds in *directions inexpedient and inappropriate. 2 Stoppage of the fearful* waste of time, injurious both to the public and *to the hospitals,* in the present overcrowded condition of the casualty and out patient departments. 3. Prevention of the pauperising effect of the present free and unchecked system of medical relief, with corresponding increase of thrift and self-dependence 4 Enhanced means of study by students of those complaints often somewhat cursorily *regarded as of slight* importance but which experience has shown to constitute the bulk of cases in actual practice. 5. Extended scope for remunerative occupation of newly qualified medical men. 6. The scheme could be carried out without any appeal for funds. These ends would be *attained* by placing the dispensaries freely open to students of the hospital to which they were affiliated and encouraging them to assist in the work there carried on. The dispensaries from their more accurate local knowledge would act as invaluable filters, their independent position enabling them to exercise discretion as to the distribution of hospital relief.

The cases would there be sorted, those fitted for the dispensary or casualty treatment retained, the more complex or serious passed on to the *hospital either for admission to the wards or for more recondite* treatment than would be available at a dispensary, into the special and out-patient departments, and so on. Experience even of the present working of these dispensaries shows clearly that after a short period for adjustment to altered circumstances they would certainly be self supporting and possibly a source of income. There would be a "provident" side attached to each such affiliated dispensary and a small charge made to all applicants not subscribing to the provident fund. Such arrangement would tend to prevent loss of self-respect in the applicant. There is practically a very small proportion of the populace which would be unable to meet this charge and such as were or are so would surely be fitting cases for the Poor-law. Of course, such a scheme requires a considerable amount of detailed working out and a letter like this is not the place in which such details can be explained. But I think that many, if not all, will see that some such plan would go far to meet the difficulties under which we at present labour and that methods are conceivable by which the idea of combining the hospitals and dispensaries and thus securing the above advantages could be worked out.

One such method I foreshadowed in my former letter, but I am quite prepared to find that many of its details might be improved to the advantage of the ultimate arrangement of the scheme. If there be one fact which study of this question of hospital abuse through a period of 20 years has rendered clear—at least to me—it is that the remedy *must be found in outside action*. The evil can never be checked by the hospitals themselves. Here, then, is a suggested means to the end desired. I venture to ask you, Sirs, once more to extend your indulgence to me in this matter.

I am, Sirs, yours faithfully,

Stamford-street, Sept. 12th, 1904. W. HENRY KESTEVEN.

A DISCLAIMER.

To the Editors of THE LANCET.

SIRS,—I beg to state that the paragraph in which my name was mentioned in the press was inserted absolutely without my knowledge.

I am, Sirs, yours faithfully,

ELLA SCARLETT-SYNGE, L.S.A., M.D. Brux.

Cromwell-place, S.W., Sept. 8th, 1904.

AN APPEAL ON BEHALF OF MISS E. B. PELLATT, L.S.A.

THE treasurer, Surgeon-Colonel F. H. Welch, 8, Brandram-road, Lee, S.E., acknowledges the receipt of the following sums additional to those already reported :—

	£	*s.*	*d.*		£	*s.*	*d.*
The Society of St. John the Evangelist	25	0	0	A Nursing Home, Blackington	0	10	0
Mrs. Webb	10	0	0	A Blind Lady	0	3	0
Mrs. Benyon	5	0	0	Mr. and Mrs. J. E. Ransome	2	0	0
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Mr. G. Jones	0	3	0	Mrs. Beaumont	5	0	0
Dr. Maria Sharp	1	1	0				
A Nurse	0	10	6				

THE CLIMATIC TREATMENT OF PHTHISIS.

To the Editors of THE LANCET.

SIRS,—Could you advise me in your next issue what part of Switzerland would best suit a delicate girl with incipient phthisis?

I am, Sirs, yours faithfully,

ept. 5th, 1904. RUSTICUS.

*** Perhaps Davos or St. Moritz might be suitable.—ED. L.

THE PASSAGE OF FOREIGN BODIES THROUGH THE INTESTINE.

To the Editors of THE LANCET.

SIRS,—I remember two peculiar cases of passage of foreign bodies through the intestinal canal that occurred in my practice. A child was brought to me and when asked of what she was complaining I got the reply that she had swallowed her dolly; and I found it to be true, for next day she passed a little china doll an inch long. In another case, when the patient was asked what was the matter, I received the remarkable answer that she had swallowed a copper tea-kettle. This also proved to be true, for a day or two afterwards a beautifully made little copper tea-kettle was brought to me with spout and handle complete that her father had made out of a penny. No pains or ill-effects occurred in either case.

I am, Sirs, yours faithfully,

S. T. HUGGINS, L R C.P. Edin., M.R.C.S., Eng.

Compton-terrace, N., Sept. 9th, 1904.

To the Editors of THE LANCET.

SIRS,—*Re* the passage of foreign bodies through the intestines the three following cases may prove interesting. 1. A child, aged six years, swallowed a piece of broken glass, triangular in shape, its sides measuring, roughly, seven-sixteenths of an inch each, its depth being three-sixteenths of an inch. 19 hours afterwards the body was passed per rectum with little discomfort and very slight hæmorrhage. 2. A man, aged 30 years, swallowed a penny and for 16 hours he felt a certain amount of uneasiness; he then "lost it" and at the end of four days and 11 hours passed it per rectum without any trouble. 3. A child, aged four years, swallowed a halfpenny and though no urgent symptoms arose for two days he then began to vomit incessantly. An application of the x rays showed the coin in the œsophagus. The coin-catcher happened to push it on into the stomach and 22 hours after entering the stomach (four days and four and a half hours after it was actually swallowed) the halfpenny was passed per rectum after an enema, the first action of the bowels since the accident.

I am, Sirs, yours faithfully,

Sept. 11th, 1904. CHAS. J. GIRLING.

THYROID GLAND IN THE TREATMENT OF CANCER.

To the Editors of THE LANCET.

SIRS,—I shall be greatly obliged if any members of the profession would let me know through the medium of THE LANCET their experience of the administration of thyroid gland in the treatment of cancer. Dr. Robert Bell has given his views in a very pronounced way in a pamphlet he has lately written. I am, Sirs, yours faithfully,

Sept. 12th, 1904. M.D.

◆

Mr. E. Peacock.—Our correspondent's attention is directed to an interesting article upon red light in the treatment of small-pox by Dr. T. F. Ricketts and Dr. J. B. Byles which appeared in THE LANCET of July 30th and the continuation of which appears in this number of THE LANCET. Dr. Finsen has also tried the treatment and has published articles thereon. Our correspondent is doubtless aware that the method was mentioned in the thirteenth century by Gilbertus Anglicus who stigmatised it as an old woman's fable and in the next century by John of Gaddesden who reported that he cured a member of the Royal family by wrapping him up in scarlet cloth.

County Coroner.—The black cockade is the badge of the royal house of Hanover worn by the servants of those who are in the service of the Crown. Coroners are now appointed and paid by county councils to perform local services; it may be, however, that they are still servants of the King and acting under his authority. We believe that strictly speaking only those who hold (or have held and are specifically allowed to retain their privileges on retiring) commissions in His Majesty's Navy and Army are entitled to the use of cockades.

Xylol.—The University of Liverpool came into existence as a university in 1903. Previously to that the medical school was at University College. The following are the numbers of medical students who entered for the full course from 1899: 1899-1900, 52; 1901-02, 50; 1902-03, 34; 1903-04, 111. This last figure was quoted to us by the dean of the University but was, we believe, subsequently corrected. We cannot at present put our hand on the modified figure.

Yellow Fever.—We should think, though we have not the book at hand to refer to, that "A Monograph of the Culicidæ or Mosquitoes," by F. V. Theobald, printed by order of the trustees of the British Museum, would give our correspondent the information which he requires. Three volumes of this monograph have been printed and the last one was reviewed in THE LANCET of June 25th, 1904, p. 1798.

Inquirer.—The points raised by our correspondent are purely legal. Assuming breach of the contract without good cause he would be entitled to damages, the measure of which would be subject to the opinion of the judge as to the length of notice which the terms of the contract might be considered to imply. So far as custom goes we believe three months' notice to be usual.

F. G. B.—There is, so far as we know, no redress for people who put themselves into the hands of quacks except by an action for obtaining money under false pretences and even then it is extremely difficult to prove in a court of law that the quack promised anything in particular.

Asthma.—The effect of climate on an asthmatic patient is so variable that it is very difficult to lay down any definite rules. For our correspondent's son we should suggest Bournemouth or St. Mary Church in England and Hyères or Cimiez abroad.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Sept. 15th, 1904.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind	Rainfall.	Solar Radia in Vacuo	Maximum Temp Shade.	Min. Temp	Wet Bulb	Dry Bulb.	Remarks at 8.30 A.M.
Sept. 9	30·06	S.W.	0 07	112	67	54	55	58	Overcast
" 10	30·14	W.	...	111	67	48	50	53	Fine
" 11	30 15	E.	...	111	67	50	56	59	Fine
" 12	29 97	E.	...	73	61	56	55	58	Overcast
" 13	29·68	S.	0·09	111	68	57	57	58	Dull
" 14	29·73	S.W.	...	70	60	53	54	58	Overcast
" 15	29 83	N.	0·13	99	65	53	54	55	Overcast

Medical Diary for the ensuing Week.

OPERATIONS

METROPOLITAN HOSPITALS

MONDAY (19th)—London (2 P M) Thomas's (3 30 P M) St George [illegible]

[illegible] Guy's (1 30 P M)

TU[illegible]

WEDNESDAY (21st)—St Bartholomew's (1 30 P M) University College (2 P M) Royal Free (2 P M) Middlesex (1 30 P M) Charing Cross (3 P M) St Thomas's (2 P M) London (2 P M) King's College [illegible] (9 30 A M) Guy's (1 30 P M)

THU[illegible]

FRI[illegible]

[illegible] (9 A M) London (2 P M) Middlesex 2 P M) University College (9 15 A M) George's (1 P M) St Mary's (10 P M) [illegible] A M), Guy's (1 30 P M)

At the Royal Eye Hospital (2 P M) the Royal London Ophthalmic (10 A M), the Royal Westminster Ophthalmic (1 30 P M) and the Central London Ophthalmic Hospitals operations are performed daily

LECTURES, ADDRESSES, DEMONSTRATIONS &c

MONDAY (19th)—MEDICAL GRADUATES COLLEGE AND POLYCLINIC (22, Chenies street, W C)—4 P M Dr H G Adamson Clinique (Skin)

TUESDAY (20th)—MEDICAL GRADUATES COLLEGE AND POLYCLINIC (22, Chenies street, W C)—4 P M Dr W Ewart Clinique (Medical)

WEDNESDAY (21st)—MEDICAL GRADUATES COLLEGE AND POLYCLINIC (22, Chenies street, W C)—4 P M Mr J Clarke Clinique. (Surgical)

THURSDAY (22nd)—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies street, W C)—4 P M Mr Hutchinson Clinique (Surgical)

FRIDAY (23rd)—MEDICAL GRADUATES COLLEGE AND POLYCLINIC (22, Chenies street, W C)—4 P M Dr D Grant Clinique (Ear)

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff It is urgently necessary that attention be given to this notice

It is especially requested that early intelligence of local events having a medical interest or which it is desirable to bring under the notice of the profession, may be sent direct to this office

Lectures, original articles and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication

We cannot prescribe or recommend practitioners

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub Editor"

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager"*

We cannot undertake to return MSS not used

MANAGER'S NOTICES.

THE INDEX TO THE LANCET

THE Index to Vol I of 1904, which was completed with the issue of June 25th, and the Title page to the Volume, were given in THE LANCET of July 2nd

VOLUMES AND CASES

VOLUMES for the first half of the year 1904 are now ready Bound in cloth gilt lettered, price 18*s* carriage extra

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During the week marked copies of the following newspapers have been received—*Hertfordshire Mercury Liverpool Daily Post Yorkshire Post Forfar Herald, Leamington Spa Courier Scottish Reformer, Surrey Advertiser, Beverley Recorder Manchester Evening Chronicle &c.*

Communications, Letters, &c., have been received from—

A.—Dr. Henry Ashby, Manchester; Mr. T. M. Allison, Newcastle-on-Tyne; Aston Union, Clerk of; Messrs. Allen and Hanburys, Lond.; Ancoats Hospital, Manchester, Secretary of.

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Y.—Dr. Eric E. Young, Lond.; Major M. T. Yarr, R.A.M.C., Bombay; Yellow fever.

Z.—Messrs. A. and M. Zimmermann, Lond.

Letters, each with enclosure, are also acknowledged from—

A.—Dr. J. L. Allen, Colchester; A. F. C.; A. L.; A. B.; A. C. S.; Dr. J. H. Abram, Liverpool; A. W. T.; A. E. G.; A. R. H.; A. A. B.

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Agent for the Advertisement Department in France—J. ASTIER, 31, Rue Bapts, Asnières, Paris.

An Address

ON

ARTERIAL SCLEROSIS,

ESPECIALLY IN REGARD TO ARTERIAL HYPERMYOTROPHY AND THE OTHER MORBID CHANGES WHICH OCCUR IN THE MUSCULAR TUNIC OF THE ARTERIES.[1]

Delivered before the Pathological Society of London on Feb. 16th, 1904,

BY THOMAS D. SAVILL, M.D. LOND.,

PHYSICIAN TO THE WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM; PHYSICIAN TO THE ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, LEICESTER SQUARE.

MR. PRESIDENT AND GENTLEMEN,—These investigations were initiated at the Paddington Infirmary where, during the seven years I was medical superintendent, nearly 500 necropsies were made on persons 60 years of age and upwards, many of whom presented circulatory symptoms during life and some of them died from the semi-invalidism we call old age. The inquiry has been continued, as far as my leisure and eyesight would permit, during the last ten years, making 17 years in all. The opportunity has thus been afforded me to examine not only the visceral arterioles but to pay more attention than is usually devoted to arteries of all sizes and in all positions throughout the body.

Definitions.—I was accustomed to define arterial sclerosis, in my own mind, as a chronic generalised thickening, condensation, or degeneration of the arterial walls, in which, after death, the lumen does not collapse as usual, and the walls are harder and less elastic than normal. Histologically such a condition may occur in three situations—in the tunica media, when it may be properly termed medial sclerosis; in the tunica intima, when it might be called intimal sclerosis; or in the tunica adventitia, when it might be termed adventitial sclerosis. Such a division of chronic [illegible] ase is more [illegible] of chronic [illegible], and peri[illegible] respectively, each being in some degree clinically and pathologically separable from the other and each being of very different relative importance. In regard to atheroma (a patchy fibroplastic infiltration of the intima) those who make many necropsies on the bodies of the aged can, I think, have very little doubt that atheroma and intimal sclerosis (the generalised thickening just referred to) are two totally distinct pathological conditions (Table I.), as Dr. William Russell[2] and others have already pointed out. Atheroma is apt to be confused histologically with the obliterative endarteritis of syphilitic and other origin which occurs for the most part in younger subjects, but it ought not to be confused with intimal sclerosis which is more generalised. Some atheroma can always be found in the bodies of persons aged 60 years and upwards who may have died without circulatory symptoms or accidents of any kind, as in the woman aged 100 years, to whom I shall refer directly, and the conclusion has been forced upon me that atheroma is of no serious pathological importance provided the cardio-vascular system is otherwise fairly healthy. The evil results sometimes attributed to atheroma—in the brain, for instance—can very often be accounted for by the yielding of the vessel wall *between* the patches and the kinking of the artery which ensues.

TABLE I.—*Showing the Distinction between—*

Atheroma.	Intimal Sclerosis.
Patchy localised fibroplastic infiltration of intima prone to undergo necrotic changes.	Fibrous thickening of the intima ent re with little, if any, tendency to necrosis.
Raised *yellow* spots or patches located on one side of an artery. These can be felt as beaded thickenings during life when the superficial arteries are affected.	Not a raised patch but a more or less uniform thickening all round the lumen of an artery without alteration of colour. Affects a considerable length of a vessel which may give to it a smooth hard feel like whipcord, not a beaded thickening.
Affecting chiefly the aorta and the *larger* arteries of the trunk and brain. May be of very limited extent. Very often met with at *the bifurcation of vessels even* in quite healthy subjects.	May affect arteries of any size but relatively more common in the medium and smaller vessels, usually affecting a considerable *vascular area and often found* in association with arterial dilatation.

In regard to adventitial and intimal sclerosis I have met with many cases in which it could be legitimately inferred that chronic adventitial and intimal sclerosis of the larger and medium-sized arteries had been secondary both in time and importance to changes in the media or (as Thoma first pointed out) to dilatation of the arterial lumen. A distinction should, I think, be drawn between intimal sclerosis in the peripheral (microscopic) arterioles on the one hand and intimal sclerosis in the medium-sized and larger arteries on the other. Their causes appear to be distinct, and certainly their effects are, for the former may obstruct [illegible] from the inference sometimes drawn that because intimal sclerosis exists in the arterioles of the kidney it also exists in the other peripheral arterioles. This is by no means so in my experience and the kidney constitutes only a small portion of the whole peripheral circulation of which the voluntary muscular system constitutes a very large part, and it does not appear right that too much attention should be concentrated on the visceral arterioles, or on the microscopic arteries at the expense of those of larger size. In this paper I propose, however, to direct my attention chiefly to the morbid changes in the muscular tunic of the arteries and to deal, first, with the relative importance of the muscular coat; secondly, with the morbid changes met with in the muscular tunic; and, thirdly, with the pathological condition which I have previously described as arterial hypermyotrophy, *its causes, and its consequences.* The data on which these investigations have been based consist of cases under my care during life (often for several years) and examined after death at the Paddington Infirmary. Clinical and pathological details will be submitted of 29 cases (out of 257 necropsies in 19 months) in [illegible] ptoms or accidents without [illegible] explanation other than their [illegible] during life.

THE RELATIVE IMPORTANCE OF THE MUSCULAR COAT.

The muscular coat of the arteries is relatively to the other two tunics the most important histologically, physiologically, and pathologically. The muscular tissue forms the thickest tunic of all the arteries and arterioles of the body, only excepting arteries of quite the largest size in which very little muscular tissue is found. In the arteries and arterioles it forms about half the thickness of the vessel wall and constitutes the functionally active part of the entire arterial system. The intima is only a limiting membrane; the adventitia is only a supporting structure of connective tissue; but the media, by the exercise of its functions, controls the circulation as a whole as well as the quantity of blood in this or that area or organ. These muscular fibres form, in short, the parenchyma or proper tissue of the arterial system. But whereas imperfections in the parenchyma of other physiological systems only affect the functions of that particular organ, any imperfection of the muscular coat of the arteries affects directly or indirectly the nutrition and oxygenation of all the organs and tissues of the body and disturbs not only the equilibrium between the different systems but also that important equilibrium between the heart and arteries on which the perfect health and life of every individual depend. We also know, thanks to the observations of Dr. George Oliver and othe [illegible] of vital [illegible] but to th [illegible] positions [illegible] equilibrium of different parts of the peripheral circulation, and therefore it is not surprising to find that postural vertigo is among the most prominent symptoms when the muscular coat loses its elasticity, contractility, or regulator powers. The older authors regarded old age as a loss of

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[1] Being the opening of a discussion on arterial sclerosis.

[2] THE LANCET, June 1st, 1901, p. 1519.

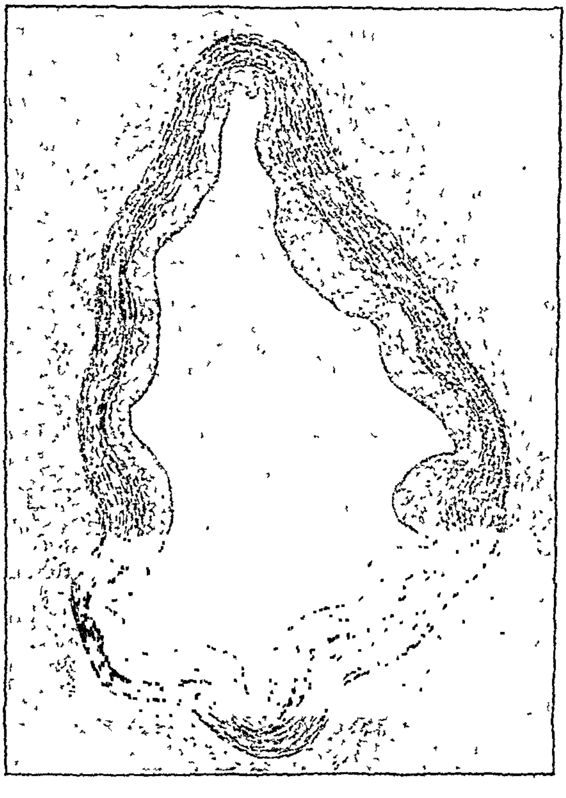
[3] Dr. George Oliver: On Pulse Gauging; London, 1895, p. 22, et seq. Dr. Leonard E. Hill: The Physiology and Pathology of the Cerebral Circulation, London, 1896.

No. 4230.

balance of functions and this was probably true in regard to the equilibrium between heart and arteries. But the most important constituent of incipient old age, in my view, is the loss of the regulator function of the arteries.

Turning to the pathological aspect, we know that extensive valvular disease of the heart or of the endocardium may exist without inconvenience so long as the muscular wall is healthy and we also know that fat may be deposited outside the heart and fibrosis amounting even to obliteration of the pericardial cavity may exist without very seriously affecting its action as long as the muscular tissue is healthy. Similarly in my experience widespread atheroma or intimal sclerosis on the one hand, or a marked adventitial sclerosis or peri-arterial fibrosis on the other has existed in many cases without manifesting any clinical or pathological consequences *provided the tunica media be fairly healthy.* As one among many illustrations of these statements the following case may be mentioned, the case of a woman who died in the Paddington Infirmary at the age of 100 years in October, 1890. Her mental and bodily powers became very gradually weaker and she passed away with no definite evidences of active disease either before or after death excepting hypostatic congestion of the lungs and a certain degree of pulmonary fibrosis so commonly present in the bodies of aged persons, accompanied by a few spots of incipient broncho-pneumonia latent during life. She was under observation for many months and during life there was no history or evidence of any derangement of the circulatory system. After death the naked eye and microscopical examination (upwards of 50 sections of the arteries and organs were examined) revealed: 1. Widespread atheroma of the systemic and cerebral arteries reaching a degree that I have rarely seen. It was found not only in the larger vessels, where it is usual in persons over 60 years of age, but also in the medium-sized and smaller vessels throughout the body and even in the ultimate ramifications of those of the brain. In the arch of the aorta one or two atheromatous patches were breaking down into what are sometimes called atheromatous ulcers, but there had been no embolism, thrombosis, or vascular rupture of vessels in any part of the body or brain. 2. The lumen of all the arteries of the body was increased to one and a half and in some of the larger arteries—e.g., the common iliac—to two and a half times the normal size. 3. The heart was small, not hypertrophied or dilated, and microscopically, excepting for moderate periarterial fibrosis and the usual brown atrophy of old age, it was normal. Besides the patchy atheroma there was in this case (4) generalised intimal sclerosis (diffuse thickening of the intima) and (5) generalised condensation and thickening in the adventitia (adventitial sclerosis), both of which changes may, I believe, in this case be regarded as secondary to, and compensatory of, the arterial dilatation. But (6) *the muscular tunic of the arteries presented practically no change*, especially when we consider her age (Figs. 1 and 2). Some degree of granular changes existed in the lower extremities, but not more than I have met with in many persons of half her age. The thickness of the media was diminished but careful measurements showed it to be strictly in proportion to the dilatation which existed. (Specimens of the organs and the cardio-vascular system were exhibited at the meeting of the Pathological Society.)

FIG. 1.



Radial artery (stai[illegible] of a woman, aged 100 years, [illegible] *arteries of* this case, a perfe[illegible] the artery is dilated and the m[illegible] The artery also shows intimal and adventitial sclerosis, which, in this case, I regard as compensatory to the dilatation. This case exhibited extremely widespread atheroma but no circulatory complications at any time.

It is surprising what grave disease of the intima may exist without at any rate local consequences. Here, for instance, is the anterior tibial artery of a woman (Case 67[4]) who died at the age of 81 years from an intercurrent malady (epidemic skin disease). The lumen of the vessel was narrowed by an atheromatous patch undergoing necrosis to only one-tenth of the normal, yet no circulatory effects or accidents occurred in the limb.

These cases are only two of many that could be quoted as supporting the conclusions: (1) that extensive patchy atheroma and even generalised intimal and adventitial sclerosis are quite consistent with extreme longevity and with the total absence of circulatory *symptoms*, accidents or complications, provided, firstly, the tunica media be relatively free from hypertrophy or disease, and secondly, the balance between the heart and arteries is not disturbed; and (2) that [illegible] disease of the muscular tunic is a s[illegible]. A slight and hardly measurable increase in the muscular tunic, spread over the entire arterial system, must have a very considerable influence on the dynamics of the circulation and on the nutrition of the body generally. Arterial hypermyotrophy is, however, only a starting point to muscular degeneration in many cases.

MORBID CHANGES MET WITH IN THE MUSCULAR TUNIC.

Muscular tissue occurs in all but the very largest arteries. The changes I have met with in the muscular tunic (apart from lardaceous disease, which hardly comes within the scope of arterial sclerosis) are atrophy, hypertrophy, cloudiness, and granular degeneration (which are always more or less generalised throughout the arterial system), and necrosis and calcification (which are mostly localised and limited). The methods of revealing these are given in the schedule of cases submitted.[5]

1. True *atrophy* of the tunica media, that is to say apart from the thinning due to dilatation of the calibre of the arteries, I have only met with as an accidental condition. A slight degree of amyotrophy was sometimes found after death from prolonged wasting disorders. Thus atrophy was met with in three emaciated cases dying from chronic pulmonary tuberculosis out of four examined, in two cases of chronic pyelitis, and in one of scirrhus of the pylorus. The atrophy or thinning of the media appeared in all of these instances to be due to a wasting of the protoplasm of the muscular fibres as judged by the undue approximation of the neighbouring nuclei.

2. *Hypermyotrophy* (Figs. 3 and 4)—i.e., an increase in the number or volume of the muscular fibres of the arteries, resulting in an increased width of the media, with or without some of the other changes about to be mentioned, was of very frequent occurrence. The almost universal occurrence of a slight degree of hypertrophy in the bodies of persons past middle life led me at one time to infer that some degree of hypertrophy of the media might be normal in advancing years just as hypertrophy of the heart has been

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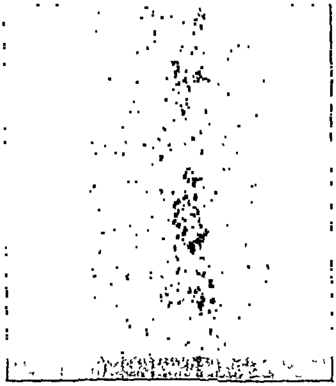
[4] These numbers refer to a schedule of cases published in the Transactions of the Pathological Society, 1904.

[5] Transactions of the Pathological Society of London, 1904.

shown to occur in the aged.[6] But the measurements are too refined and the conditions for which allowances have to be made, such as the size of the lumen of a vessel, are too [illegible] changes about to be mentioned. At any rate, in all the cases I have examined I have never met with nebular or granular degeneration or necrosis without some degree of the former (after allowing for the dilatation or contraction present) though hypermyotrophy was sometimes met without the degeneration. Hypermyotrophy and its other consequences will be referred to more particularly later.

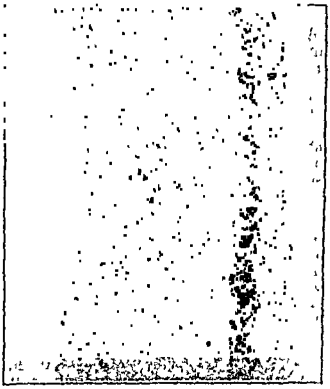
3. *Cloudy or nebular degeneration* of the muscular fibres (Fig. 3) consists of a faint cloudy condition of the protoplasm mostly accompanied by enlargement of the fibres. With logwood and other ordinary stains slighter degrees of this cloudiness are not revealed but with neutral orcein the faintest degree becomes manifest. When treated in this way the tunica media of the lower limbs of nearly all persons examined past middle life showed some slight cloudy changes. Cloudiness in the protoplasm apparently commences in the innermost layers of the tunica media, for it was always most marked in this situation.

FIG. 2.



Brachial [illegible] 00 years, the same patient [illegible] media for comparison [illegible] It also shows the intimal [illegible] to in the text.

FIG. 3.



Brachial artery (× 60) of a man, aged 73 years, showing arterial hypermyotrophy, with commencing granular degeneration in the inner layers and nebular changes in the outer layers of the media.

4. *Granular degeneration* (Fig. 3), like th[illegible] dominated in the inner layers of the t[illegible] occurred together with cloudy changes in [illegible] forms and is probably an advanced stage of [illegible] tunica media in granular degeneration is brittle and more difficult to mount, the muscular fibres lose their outline, their protoplasm breaks up into fine granules, and later the muscle nuclei also break up. This granular condition seems to me to correspond in some respects (its usual areas of distribution in the arterial system, for instance) with the "diffuse arterio-sclerosis" described by Thoma.[8]

Dilatation of an artery, local or general, was often associated with either of the two preceding changes, and with it there may be an *apparent* thinning of the media. Both the adventitia and intima of such dilated arteries were, in my experience, as in the case of the woman aged 100 years, almost invariably denser and thicker than normal, and this adventitial and intimal sclerosis should, I think, be regarded as compensatory and conservative conditions. Probably dilatation itself is in a sense a conservative process in cases of persistent high tension.

5. *Necrosis* of the media consists of local spots or foci of amorphous débris which take a very dark stain with aniline or logwood. The parts of the artery on each side of a focus may be quite healthy in some cases (e.g., Case 42) and such a focus is then very easily overlooked, while in other cases the media is also the seat of cloudy granular changes.

6. *Calcification* of the media was not so common as the preceding changes. It was met with in the later stages of arterial disease in two forms. Sometimes it was seen in the form of plates which had apparently succeeded the necrotic changes just referred to. These plates must not be confused with the more common atheromatous plates in the intima (particularly of the bigger vessels) which may encroach on, but do not originate within, the media—*a fact which can be revealed by the use of acid* orcein to define the boundaries of the tunics. A second variety of calcification takes the form of spicules surrounding the lumen of an artery which appear to be due to a transformation into calcareous material of swollen muscular fibres or bundles of fibres. These spicules were apt to be more generalised than the plates and might (as in a man aged 66 years) render entire lengths of various arteries as rigid as gas-pipes. Both necrosis and calcification are fairly common in the popliteal artery even when the rest of the arterial system is fairly healthy.

[illegible] may present a very striking resemblance to fibrous tissue both to the naked eye and under the microscope. But adequate preparation and staining have always brought out the characteristic rod-shaped nuclei of involuntary muscular tissue between the internal and external boundaries (as defined by acid orcein) of the tunica media. The media may of course be encroached on and apparently dilated and thinned by dense fibrous intima, as in the renal arterioles of some cases of chronic interstitial nephritis.

It is not possible to give statistics as to the relative frequency of these several changes because they were so commonly associated in varying degree in the same patient. Hypertrophy, cloudy changes, and granular degeneration of the media are undoubtedly generalised changes such as would arise from nutritional, dynamic (e.g., high tension), or toxæmic causes. They were always generalised in their distribution, though apt to predominate in some vascular area, very often in the arteries of the lower extremities—a penalty perhaps for man's erect posture. But focal necrosis and plates of calcification were local and limited in their occurrence and might be met with in any, often in the most unexpected, parts of the arterial system. They resembled the results of injury (as in the popliteal where they are so common) or the blocking of the capillary area of the vasa vasorum. The effects of these two sets of changes are also somewhat different. The consequences of arterial hypermyotrophy, cloudy and granular degeneration, the generalised changes, were primarily to disturb the dynamics of the circulation and the nutrition (e.g., the elasticity and contractility of the vessels and the cardio-vascular balance). The effects of the necrosis, on the other hand, were local and led to rupture and hæmorrhage. Necrosis of the media, which was not infrequently associated with arterial hypermyotrophy, if unaccompanied by compensatory adventitial or intimal thickening, appeared to be one of the most insidious and lethal of medial degenerations (Fig. 6). It might be present in one or two spots in an arterial system which, excepting for hypertrophy, might be otherwise absolutely normal. Consequently these spots are very difficult to find, but my belief is that they exist (in association with arterial hypermyotrophy) in a large proportion of cases of cerebral hæmorrhage. Such an association was found in at least four of the six cases of cerebral hæmorrhage among the 30 cases submitted. It may have been overlooked in the other two in spite of the most careful search.

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[6] Boyle: Proceedings of the Royal Society, 1861.
[7] THE LANCET, May 1st, 1897, p. 1235.
[8] Various papers scattered through Virchow's Archiv, 1883-1889.

ARTERIAL HYPERMYOTROPHY.

Arterial hypermyotrophy was a term I first used in 1891[9] and again in 1897[10] to describe an increased thickness of the muscular tunic of the arteries due to an increase in volume or number, or both, of the individual muscular fibres. A numerical increase is very difficult to determine. The question whether an increased volume or swelling of the individual muscular fibres is to be called a hypertroph is an important one. I still regard the condition as primarily a genuine muscular hypertrophy, just as an increased thickness of the cardiac wall in which some or all of the muscular fibres are swollen is also so regarded. My subsequent researches with acid and neutral orcein have, however, revealed a certain cloudiness of the protoplasm of the muscle in some cases in which other stains did not reveal it. This nebular condition, as I have just mentioned, is probably the earliest stage of degeneration. But the fact of degeneration having commenced by the time a case reaches the post-mortem room does not negative the existence of hypertrophy. In point of fact, arterial hypermyotrophy must be regarded—an opinion shared by Dr. William Russell[11]—as being the first step to most medial degenerations, the earliest phase of medial sclerosis, the first change when a strain is thrown on the arteries; hence the importance of its recognition.

Arterial hypermyotrophy, as thus histologically defined, constitutes, in my experience, a distinct clinical and pathological condition of prolonged course, capable of recognition during life by careful investigation,[12] characterised in the first stage mainly by "postural" vertigo and other symptoms of high and unregulated blood pressure; in the second stage mainly by the evident thickness of the arteries, cardiac hypertrophy, and sometimes by cerebral or other hæmorrhage; and in the final stages by the various circulatory and nutritional disturbances which may ensue. Sometimes, but not necessarily, it is associated with chronic renal disease, which is only one amongst many of its causes and it constitutes in itself one of the main pathological conditions on which cerebral and other hæmorrhages depend and on which the incipient phenomena of "senile decay" also depend. During the 19 months June 1st, 1890, to Dec. 31st, 1891, there were 257 necropsies made at the Paddington Infirmary. 28 of these 257 cases were patients who had presented circulatory symptoms or accidents during life but who had no cardiac valvular disease. It was the combination of these two circumstances which induced me specially to investigate the arterial system. The muscular tunic of every one of these cases was increased in thickness, in many it was associated with other morbid changes in the media, and in some cases with abnormalities in the other arterial tunics. Two similar cases (No. 41, a case of accidental death, and No. 42, an interesting case of arterial hypermyotrophy in which the patient died in the Paddington Infirmary in the spring of 1892) are added to this list, making 30 in all. Clinical and pathological details of these cases and the methods adopted in the examination are given in the appendix.[13] Measurements were made of the muscular and other arterial coats by means of an eye-piece micrometer; the lumen was also measured and allowed for. Upwards of 1500 microscopic specimens of arteries were examined, measured, and compared with normal specimens, an average of 50 sections to each case, taken from arteries of various sizes of the limbs, abdomen, thorax, and head, as well as the arterioles of the viscera. These 30 cases have been arranged in two groups. Group A comprises 17 cases in which the arterial hypertrophy was *relatively* uncomplicated by other arterial disease and by less advanced degeneration of the tunica media. Group B comprises 13 cases in which the arterial hypermyotrophy was complicated more or less with advanced degeneration, dilatation, or other arterial disease—viz., intimal or adventitial sclerosis or atheroma. These cases represented the later stages.

The difficulties of an inquiry such as this were considerable. 1. The universal distribution of the arterial system makes these examinations most tedious and prolonged and the extensive dissections required often prevent one getting permission from friends. 2. Two or three sections of an organ will give you a good general idea of its morbid changes, but this is not so in the arterial system when 50 sections sometimes seem inadequate. 3. The minuteness of the measurements render the greatest care and precision necessary. 4. The state of contraction or dilatation of an artery is only one of the many conditions for which allowance has to be made in measuring the muscular tunic. If an artery is in a state of contraction the media is, of course, thickened, whether there be hypermyotrophy or not, and the intima is thrown into folds; if it is dilated the media is, of course, thinned and the intima stretched. No medial measurements therefore are of much value unless the calibre of an artery as compared with a normal specimen is measured and recorded. 5. Considerable difficulty is very often experienced, especially in degenerate arteries, in distinguishing the boundaries of the middle coat, and after trying auric chloride, nitrate of silver, and many other stains I found in acid orcein an ideal stain which brought out into marked prominence the elastic layer of Henle and the increased quantity of elastic tissue which is found in the inner layers of the adventitia. 6. But perhaps the greatest difficulty of all consisted in securing a normal standard from which measurements and comparisons could be made. In my search for a normal standard I found, as already mentioned, that there was certainly a minute variation in the thickness of the tunica media in various conditions, both in health and disease. After examining several bodies in which death occurred from acute or chronic disease, at last I procured some specimens from persons who had died from accident in the midst of apparent health.

As examples of arterial hypermyotrophy I will refer to three cases which represent the three stages of the disorder: (1) simple hypermyotrophy; (2) hypermyotrophy with incipient degeneration; and (3) hypermyotrophy with degeneration, dilatation, and compensatory intimal and adventitial sclerosis.

1. In the course of my search for a normal standard I had, by the courtesy of Dr. Danford Thomas, the opportunity of examining the body of a man, aged 30 years, who was riding his bicycle across Oxford-circus when he came into violent collision with the shaft of a four-wheeled cab, which smashed his ribs into his liver, and he died in 12 hours. The case may be regarded as being one of arterial hypermyotrophy in its earliest phase when the *media is free* from degeneration of any kind. The average of 40 specimens of arteries and organs examined in this case showed an increased thickness in the muscular tunic of the arteries of $\frac{3 \cdot 3}{2 \cdot 5}$. The heart was slightly hypertrophied and weighed 11½ ounces and the muscular tissue was quite healthy. All the other organs were normal. After some difficulty I traced his wife who informed me that he had always seemed quite healthy but complained a good deal of headaches. I am glad to have been able to exhibit this case because arterial hypermyotrophy is not very often met with in the post-mortem room in such an early and unmixed condition. There was, as far as I could tell with the means

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[9] Annual meeting of the British Medical Association, 1891 (Pathological Section).

[10] Transactions of the Medical Society, vol. xx., p. 271; and Brit. Med. Jour., Jan. 23rd, 1897, p. 188.

[11] THE LANCET, June 1st, 1901, p. 1519.

[12] Brit. Med. Jour., Jan 23rd, 1897, p. 188.

[13] Transactions of the Pathological Society of London, 1904.

at my disposal, a numerical increase in the muscular fibres but this young man's arteries (e.g., the radial and anterior tibial) also revealed an increased thickness of the individual fibres. I have sometimes been asked if such thickening does not indicate degeneration rather than hypertrophy. Now, the individual fibres of all contracted arteries are thickened and I have repeatedly seen the same thickening with or without contraction in normal arteries taken from young and perfectly healthy subjects; there is a remarkable variation in this respect within the range of health. True degeneration is revealed by granular (and perhaps cloudy change) or other definite changes in texture.

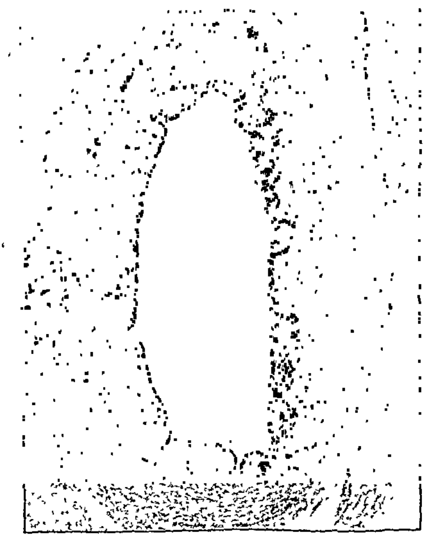
2. The following case (Case 42) may be regarded as a fair example of arterial hypermyotrophy terminating at a relatively early phase of the disorder in cerebral apoplexy. A man, aged 56 years, was admitted into the Paddington Infirmary on April 14th, 1892, for left hemiplegia, which had come on suddenly while he was at work the day before without loss of consciousness. The præcordial dulness was extended and the apex beat was forcible. The pulse was full, *the arterial tension was high, and it was noted by one of* my colleagues that "the artery feels like whipcord." The abdominal organs were natural. There was incontinence of urine but some was collected and it was noted as being copious, clear, pale, acid, specific gravity 1020, with no albumin or sugar. We were informed that his mother had incurred a stroke of paralysis down one side, followed by death two years later, and that one sister was in an asylum. His brother, aged 58 years, had previously been in the infirmary for "bronchitis" and there was a note in our records that he also had "whipcord-like arteries" and complained of "giddiness when he stooped." The patient's previous history revealed that he had taken both beer and spirits in fairly liberal quantities but not to what was regarded as excess. He had suffered from "bronchitis" from time to time. For the past two years he had been troubled with swimmings and giddiness in the head, especially after stooping, had complained of a good deal of headache, occasional breathlessness, and depression of spirits.

comatose and died

out fresh symptoms.

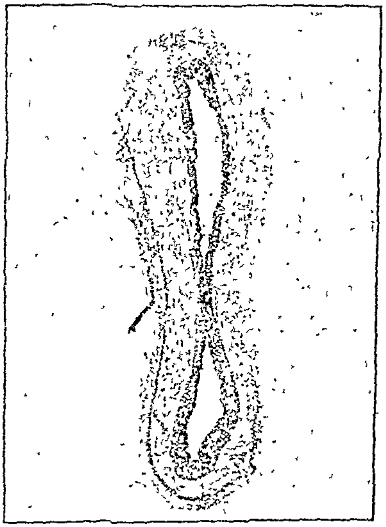
was found excepting in the vascular system. The right kidney weighed four ounces and the left four and a half ounces; microscopically they were quite normal, excepting that the arterioles stood out and remained patent. Microscopically the media of the arterioles was thickened but the parenchyma was perfectly normal. The heart weighed 13 ounces and its walls were notably hypertrophied and slightly dilated. The muscular tissue appeared normal to the naked eye and under the microscope. The valves were perfectly healthy. A naked-eye examination of the arteries showed that the radials and all the other arteries of similar and smaller size were slightly contracted, with the single exception of the dorsalis pedis on both sides, which was dilated, and that the muscular coat of *all the arteries* was notably thickened even after allowing for the slight diminution of calibre. The brachials, radials, and femorals were tortuous, showing an increase of the media in length as well as in thickness. Microscopically, sections of over 50 different arteries were examined and measured, the average measurements being, calibre $\frac{18}{20}$, media $\frac{4\cdot5}{2\cdot5}$, adventitia $\frac{2}{2}$, and intima $\frac{1}{1}$.[14] The increase in the muscular tissue was most marked in the lower extremities; the average was $\frac{5\cdot7}{2\cdot5}$, that of the upper

FIG. 4.



Radial artery (stained with logwood, × 35) from a man,

FIG. 5.



Normal radial artery for comparison with the preceding (stained with logwood and weak nitrate of silver solution to bring out the boundaries of the middle coat. × 35).

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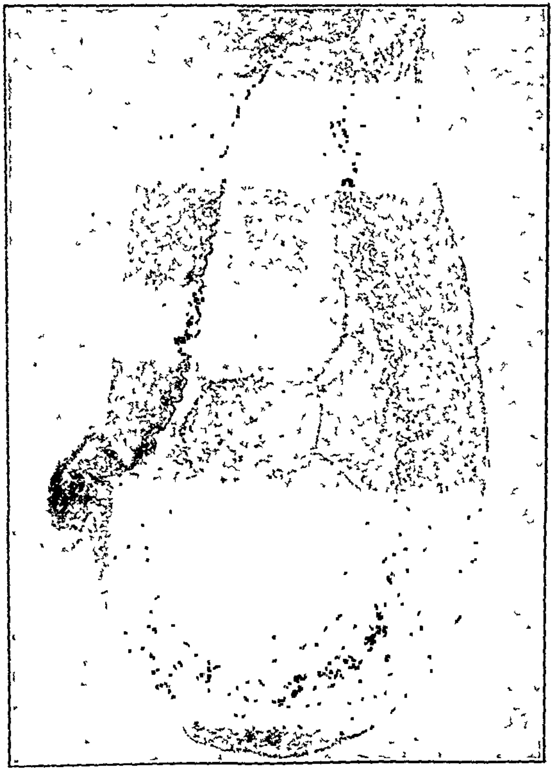
[14] These figures represent divisions of the eye-piece micrometer. The upper measurement is the actual measurement of the artery under examination; the lower represents the measurement of a normal

labour, for the fraction already expresses a ratio of abnormal to normal.

extremities and abdomen being $\frac{4\cdot1}{2\cdot5}$ and the splenic artery $\frac{4\cdot0}{3\cdot0}$. In the radial (Fig. 4) the thickening of the media was very marked, the measurements being $\frac{20}{20}$, $\frac{5\cdot5}{2\cdot5}$, $\frac{2}{2}$, and $\frac{1}{1}$. The muscular tissue of the arteries appeared to be normal and free from degeneration excepting a moderate degree of cloudy swelling in the inner layers of the media in the arteries of the lower extremities. In the arterioles of the viscera the muscular tissue was increased, but less than in the arteries of the limbs and abdomen. A slight amount of intimal thickening could also be observed in the arteries of the lower extremities. Elsewhere the tunica intima was normal. The adventitia was not notably increased or condensed anywhere (excepting perhaps in the radial and dorsalis pedis arteries). The cerebral vessels appeared to be remarkably healthy both to the naked eye and microscopically and I was at a loss to know why this patient should get hæmorrhage in this situation. There were no atheroma and no thickening in any of the coats to be detected. The media was perhaps slightly increased but the increase was hardly measurable. Nevertheless, in the centre of the brain, which was otherwise quite healthy, there was a recent blood clot of about the size of a hen's egg, occupying the right internal capsule. These were the results of going twice over the specimens of more than 50 arteries. When all the arteries are simply too thick why should they rupture? The most obvious explanation was that the marked hypermyotrophy of the systemic arteries and the heart threw an extra strain on the relatively unhypertrophied arteries of the brain, and I think this explanation is sufficient, or partly sufficient, to account for many cases of apoplexy. But on further search of additional sections I came across a minute (microscopic) necrotic focus in the tunica media, surrounded on all sides by healthy muscular tissue, in four situations, one in a section of the radial, one in an arteriole in the kidney, one in the basilar artery, and one in a section of the middle cerebral artery (Fig. 6) which was bulging. I think it is safe to infer that this man's cerebral hæmorrhage came through such a bulging. But one meets with other cases of medial necrosis without cerebral hæmorrhage, therefore the cardio-arterial hypermyotrophy and its consequent high tension must, I think, still be regarded as the main cause of the cerebral hæmorrhage in this case. It is in many ways a most instructive one, uncomplicated as it was with any renal disease and unmixed to any extent with intimal or adventitial sclerosis or with those extensive degenerative changes in the media which so often supervene (e.g., Cases 58 to 70[15]) before the patient reaches the post-mortem room.

FIG. 6.



Middle cerebral artery (logwood stained, × 40) of a man, aged 56 years, the case is described in the text. There was, *as usual in the cerebral arteries in cases of arterial* hypermyotrophy, only very slight hypertrophy of the media. But a minute focus of necrosis has resulted in bulging, such as would give rise, when combined with high tension, to the hæmorrhage from which he died.

3. The third case, taken from among many similar ones, illustrates the final stage of arterial hypermyotrophy when degeneration, dilatation, and intimal and adventitial sclerosis had supervened (Fig. 3). A man, aged 73 years, had been many years in the workhouse and was for four and a half years under observation in the Paddington Infirmary. Since the age of 59 years he had been subject to vertigo, especially on any change of posture, *which was at first relieved by nitroglycerine.* At the age of 71 years the vertiginous attacks were replaced by attacks of syncope, sometimes even while he lay in bed. He died suddenly in one of these syncopal attacks at the age of 73 years. The kidneys (the total weight of which was nine and a half ounces) and other organs were healthy and the urine was always normal. The heart was hypertrophied, the weight being 19 ounces. The brachial artery compared with that of the patient aged 100 years, whom I have already alluded to, depicts the muscular increase (Figs. 2 and 3). The calibre of these two arteries was the same and therefore their tunics are strictly comparable. The patient's hypermyotrophy was widespread, more marked in the lower and less marked in the upper half of the body, and least marked in the brain. Some degree of degeneration of the media existed in the lower parts of the body; there was cloudiness in the upper. Dilatation (average $\frac{27}{20}$) and tortuosity with some degree of intimal and adventitial sclerosis existed, most marked in the larger arteries and those of the lower limbs. Some atheroma existed in the largest vessels only. In all the other cases submitted with this paper the leading symptoms during life were circulatory, and the leading change after death was cardio-arterial hypertrophy, many of them, as already explained, being mixed when they reached the deadhouse with degeneration or other conditions. For instance, in Case 48 (Group A), a man, aged 65 years, a case of senile vertigo, who died from cardiac failure, the tunica hypermyotrophy, which amounted in some places to $\frac{6\cdot1}{2\cdot5}$, was associated with marked dilatation (amounting sometimes to $\frac{47}{20}$) and some generalised intimal sclerosis. In Case 60 (Group B), a woman, aged 76 years, a case of chronic interstitial nephritis, who died from uræmia, the hypermyotrophy averaged $\frac{4}{2\cdot5}$ and was associated with some degeneration and dilatation in the larger arteries and contraction in the smaller arteries. In Case 70 (Group B), a man, aged 75 years, a case of giddy, fainting, and cyanotic attacks, who died from "senile decay," the hypermyotrophy was associated with degeneration, dilatation, and slight generalised intimal sclerosis.

In all the 30 cases which are submitted the muscular coat of the arteries was increased in thickness, even after making allowance for any dilatation or contraction of the vessel. Microscopic measurements showed that the average increase in the muscular tissue of the arteries of the 17 cases in Group A was nearly 50 per cent.—i.e., one and a half times the normal. The greatest average increase was $\frac{12}{5}$ and the smallest $\frac{7}{6}$ of normal. In Group B the average was about 31 per cent. The increase in the muscular coat had in most instances taken place in length as well as in thickness, so that the artery had become tortuous. A thickened tunica media when fairly marked can after a little practice be detected by the naked eye or with the aid of a one inch Codrington lens. The vessel loses some of its pliability, remains unduly patent, and does not collapse as a normal artery does. The media may even project beyond the intima and adventitia as though their connexions were loosened. Histologically the change I am referring to is not a fibrosis even in the arteries and arterioles, for the rod-*shaped nuclei could always be revealed* when the section was efficiently and thoroughly prepared (see schedule of cases[16]) As regards *distribution*, I found that the radial artery might be regarded in most cases as a tolerably fair sample of the thickness of the muscular tunic throughout the arterial system, though by no means of its condition as regards degeneration The media of the arteries of the lower extremity was nearly always more hypertrophied (and presented a more advanced stage of degeneration) than those of the upper extremities and these latter were more affected than those of the brain The different arteries of a limb might vary considerably among themselves both as regards thickness and degeneration The middle coat of the cerebral arteries was often quite normal in thickness The major distribution in the lower extremities suggests the explanation that gravity throws more strain upon these latter and that the relative exemption of the cerebral arteries was due to the same cause Dr Oliver s and Dr Hill s observations[17] support this view This relative exemption of the cerebral vessels from the thickening of the media probably helps, as previously mentioned, to explain the frequent occurrence of cerebral hæmorrhage in cases of arterial hypermyotrophy

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[15] See Appendix in the Transactions of the Pathological Society of London, 1904.

1 Among the *causes of arterial hypermyotrophy* the first question which claims our attention is its relation to chronic renal disease The late Sir George Johnson[18] first demonstrated muscular hypertrophy in the systemic arteries and arterioles of the kidney in association with chronic renal disease and this has been confirmed by others[19] Undoubtedly chronic renal disease is very constantly accompanied and followe[illegible] d is what one w[illegible] hich is so usual [illegible] cannot be regard[illegible] rophy, for out of [illegible] could be classed as suffering from chronic renal disease—four out of 17 in *Group A (Cases 43, 46, 51* and *Case 44* who presented alcoholic fatty degeneration of all organs[20]) and five out of 13 in Group B In the remaining two thirds (21 cases) there were no urinary changes during life and no evidence of renal disease after death It is now universally admitted that a slight degree of fibrosis in all organs is normal and usual in the aged, but this is not likely to be mistaken for incipient interstitial nephritis especially when the urine has been normal during life and the weight and macro and microscopic characters of the kidneys are natural Since the days of Mahomed Ewald and others (1881) the meaning of the term "chronic Bright s disease' has by some been extended so as to connote [illegible] sease followed by arterial [illegible] generalised morbid condition [illegible] gh arterial tension various circulatory and nutritional defects associated or followed with more or less indefinite evidences of renal disease I wish in the first place to protest against the name of Bright being applied to any but cases exhibiting definite evidences of renal disease during life and after death Such a confusion is undesirable and unnecessary Secondly, I would submit that the *generalised* clinical condition to which I have just referred as being called by some chronic Bright s disease corresponds anatomically with cardio arterial hypermyotrophy and its consequences, and clinically with the senile hyperpiesis described by Professor Clifford Allbutt[21] or some other form of high tension with its concomitant circulatory and nutritional defects Thirdly, my investigations prove that although chronic renal disease is a potent agent it is not by any means the only cause of arterial hypermyotrophy

2 Hypertrophy of the heart may well be regarded as in some way *causally related to arterial hypermyotrophy* either may be the cause of the other or both may be the product of a common cause It existed in all of the 17 cases of Group A the average weight being 13 9 ounces two being as high as 19 ounces In none of these did any valvular disease exist six cases of arterial hypermyotrophy with cardiac valvular disease having been excluded from the list on this account In Group B the average weight of the heart in the 13 cases was 12 5 ounces, one being as high as 17 5 ounces In persons whose ages were mostly over 60 years it is not to be expected that the heart though hypertrophied will always be free from degenerative changes Nevertheless, in 13 the microscopic structure was healthy or exhibited only the 'brown atrophy of the aged Fatty degeneration existed in three cases fibroid degeneration in six cases and some granular degeneration in ten cases the pericardium was adherent in three case[illegible] from these data is that the [illegible] trophied in cases of arteri[illegible] my belief is that if the arterial system were oftener investigated in cases of *cardiac* hypertrophy some *arterial* hypermyotrophy also would be found and much light thus be thrown upon the subject It is only natural that the opposing forces of the heart and arteries should act and react on each other But which of these first hypertrophies or whether, as seems possible, they both start at the same time and, finally, which first begins to give way and to degenerate and to dilate must, generally speaking, be matters of conjecture

3 High arterial tension, sometimes intermittent but usually persistent, has existed in all the cases of arterial hypermyotrophy which I have observed before arterial dilatation or degeneration has occurred and in many cases after this has taken place This was estimated by the finger and [illegible] seen after [illegible] or clinical [illegible] gh tension having existed antecedently to the occurrence of any arterial hypermyotrophy, but in view of the well known fact that excessive functioning, in health at any rate, produces over growth and the frequency with which the known causes of high tension could be revealed in the history of the cases submitted it seems extremely probable that high arterial *tension is the main cause of arterial hypermyotrophy* For instance, in the 17 cases in Group A there was a history of alcoholic excess in seven of gout in two, of passing gravel or lithates in six, chronic renal disease existed in three, and in the remaining case there was no information of value on the point My belief is that these figures represent approximately the truth about the matter and that alcohol in anything more than medicinal doses plays the leading rôle in this and other medial changes, sugar in excess perhaps coming next

4 Heredity and age no doubt play their part in causation But the information before us is not sufficient to draw any very definite conclusions The average age at death of 16 out of the 17 cases in Group A (excluding Case 41 who died from accident) when they reached the post mortem room was 66 5 years but this is no guide as to when the condition supervened It may have existed 10 or 20 years in some two or three in others, many had had symptoms for years Three died at 38 42, and 56 years of age from cardiac failure uræmia and cerebral hæmorrhage respectively, the remainder were over 60 years of age when they died In Group B the average age at death was 74 5 years These were cases in which the media presented marked degeneration and which were complicated by other arterial disease

The *consequences* of arterial hypermyotrophy seem to be mainly the same as those of high arterial tension—namely hypertrophy of the heart and subsequent degeneration of the cardio arterial system with disturbance of the functions of all organs Cardiac hypertrophy has already been alluded to 1 Undoubtedly one of the most serious consequences is cerebral hæmorrhage It occurred in four cases in Group A and two in Group B This seemed to be due not so much to the hypermyotrophy in the media of the cerebral arteries *themselves as to the relative immunity of these vessels* Arterial hypermyotrophy being most marked in the systemic arteries the rigidity of these vessels throws a strain on the least protected part and any excessive cardiac hypertrophy undoubtedly contributes to this end Further, when describing Case 42 I alluded to the possibility of minute foci of necrosis which might easily be overlooked, also forming an important factor in cerebral and other hæmorrhages It will be noticed that hæmorrhages in other situations than the brain, epistaxis dermal hæmorrhage frequently arose in several of the cases more particularly in Group B cases in which degenerative changes in the arteries were most marked Cerebral accidents other than cerebral hæmorrhage occurred in only one case in Group A and in four cases in Group B 2 Reference has already been made to various degenerative changes in was very ill. The next morning his temperature was 100° and at midday 99°.

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[16] Transactions of the Pathological Society of London 1904

[17] Loc cit

[18] Brit. Med Jour 1870 vol i p 331 Transactions of the Royal Medical and Chirurgical Society 1873 and elsewhere

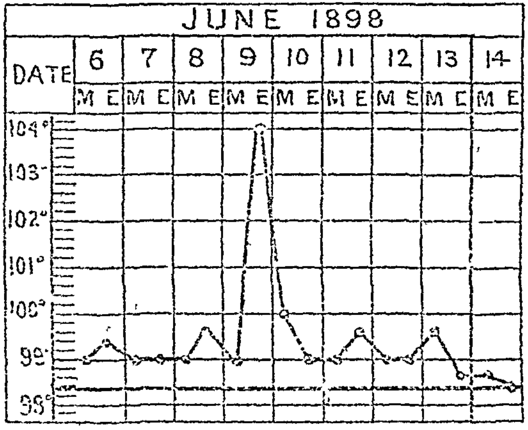
[19] Professor Hamilton Text book of Pathology Dr W H Dickinson The Baillie Lectures THE LANCET July 20th 1895, p 130 and others

[20] Transactions of the Pathological Society of London, 1904

[21] THE LANCET Jan 17th 1903 p 170

The question now was could anything more be done for him. All his future prospects were being ruined by his continued absence from school and although he had now been running wild for some months his "heat centre" was apparently as "imbecile" as it had ever been. In the course of the previous year I had discussed the condition with quite a number of medical men whom I had met in consultations and no two of them had ever agreed as to the diagnosis. The most thought that there was some obscure tuberculous condition which we could not find, some thought it was worms, while one very eminent throat specialist kindly offered to operate on him for adenoids, as he had known several cases in which similar attacks of fever had disappeared after this operation. I determined that I would take the boy quite independently to two eminent medical men and if they differed in opinion to ask a third to review their decision. He first saw Dr. Eustace Smith, who entered fully into his case, examined him thoroughly, and said that he considered it all a question of "acute gastric catarrh" due to diet, and he gave the following dietary. The following were to be avoided: starchy puddings, jam, honey, marmalade, &c., fruit, raw and cooked, potatoes, turnips, carrots, sweet cakes, and oatmeal porridge. The following were allowed: beef, mutton, birds, fish, bacon, ham, tongue, eggs in any shape, green vegetables, bread and butter; puddings: custard, batter, bread and butter, light suet pudding, pancakes, rusk pudding, blancmange made with gelatin, stewed figs and prunes, and bananas. Dr. Smith also recommended a particular kind of bath. The boy was to sit in water of a temperature of from 100° to 105° and was to be sponged with this. Finally he was to have a douche down his back of water of a temperature of 75° poured out of a jug. He was then to be well rubbed with a towel. Dr. Smith considered that this bath hardened the system and prevented the tendency to catarrh. I next took the boy to Dr. (now Sir Thomas) Barlow, who also fully entered into the case and expressed in almost identical terms the same opinion as Dr. Smith. So much was this the case that both Dr. Smith and Sir Thomas Barlow stated that they did not often see a case in which the fever rose so high as 104° from this cause and both expressed the opinion that the whooping-cough had left the boy's nervous system especially susceptible and that the height of the fever was due to this condition left by the whooping-cough. Sir Thomas Barlow recommended precisely the same diet with one important addition—that we might sometimes give potatoes fried quite dry as chips. He did not mention the bath. I had not expected that the opinions of these two eminent physicians would have so entirely coincided and having an *appointment* with Sir William Broadbent I took the boy to him. I told him exactly what had taken place and said I thought that I need not trouble him in the matter. He, however, examined the boy carefully, came to the conclusion that there was no evidence of any disease, and agreed with Dr. Smith and Sir Thomas Barlow as to the cause of the attacks.

CHART D.



I returned to Exeter very much gratified by the result of my visit to London. We had at last found out a cause which might account for the "imbecile condition" of the boy's "heat centre." But I confess that I was not yet convinced that we had found the final cause of the fever. In former years I had passed some 18 months as resident medical officer of the Evelina Hospital for Sick Children and I had never recognised such a cause of fever. Amongst others I had discussed the condition with a friend who very recently had been resident at the Hospital for Sick Children, Great Ormond-street, and he was as ignorant on the subject as I was myself. Still we determined to give the treatment a thorough trial; we adopted the diet and the bath and watched the temperature. Within ten days the temperature became normal and there it remained more or less entirely ever since. We sent the boy back to school; at first for half the day, then for the whole day, and he never had another attack. He then went to a boarding school where his dietary could be kept up and he did well. After two years gradually he went back to a fuller diet: to potatoes carefully cooked, to a certain amount of milk pudding, and as he grew older he began to take a certain amount of jam. Then he passed into the Navy and on the *Britannia* he fed exactly like the other boys and he is now a midshipman leading just the ordinary life of the Navy and he is as strong, as well developed, and as good at athletics as any other boy of his age. I said that he never had another attack after his taking this diet. This is not quite accurate, for he had one attack about a year after he commenced it. He then had a good helping of black currant tart with sugar and cream and that evening he had a temperature of 102° which went down the next day. After this his diet was more strictly kept until he went to the *Britannia* (aged 14 years and three months) and he never had another of the attacks. I venture to think that this solitary attack within a few hours of eating the black currant tart, sugar, and cream is of more significance as indicating the dependence of these attacks on certain articles of diet than any other fact which could be put forward.

Now since I have known this cause of fever in 1898 I have met with some eight or nine similar cases of which I have more or less accurate records. In all these cases the children have been much under their proper average weight for their height and age. In every case the stomach has been very much distended. Sometimes there have been definite histories of more or less frequent feverish attacks, whilst in some cases the children have been observed to be flagging and below weight and then the temperature has been observed to be always above normal. In those cases in which attacks of fever have occurred the cause had never previously been recognised. In some cases the attacks were termed influenza, in some febricula, while in one case the child was said to have constantly recurring attacks of bronchitis in which, however, the ordinary symptoms of bronchitis were absent. In those cases in which the children were found to be flagging and under weight the temperature might be observed for some weeks ranging between 99·2° and 100° just as was noticed in my boy's case when at Budleigh Salterton. In every one of these cases the greatest improvement has followed the adoption of the diet recommended by Dr. Smith without the baths which I have rarely, if ever, ordered. As far as I know, a cure has resulted in all these cases, but I have not been able to follow them all sufficiently to state whether the cure has continued altogether.

Very little has been published on this subject; as far as I am aware the only reference to it is in Dr. Smith's large work on "Diseases of Children." I do not, however, quite agree with Dr. Smith's view as to how these various farinaceous foods act. When I saw him with my boy I understood him to hold the view that it was the "actual fermentation of these foods" which did the harm. But in a letter which he was good enough to write to me on Feb. 23rd, 1903, he corrected this view. In this letter he says:

"In these cases I do not attribute the fever to the irritation of fermenting food, although, of course, there is active fermentation going on in the alimentary canal, but to the catarrh, including the liver upset. The latter (the condition of the liver) has, I think, a *great* deal to do with the rise of temperature, for a dose of calomel or blue pill, which sets the liver working, generally puts a stop to the fever directly it has had time to act. I am constantly seeing cases like your boy and cure them always in the same way. One of the difficulties is to get mothers to realise how sensitive the children become to cold and one has to repeat this to them again and again; for as the child goes on catching cold upon cold—every time becoming more susceptible to chills—he becomes after a few months like a hot-house plant and the slightest exposure at once upsets his weakly digestive organs. To cure them you have to give them back their normal resisting power to chills and until you have done this they are never safe "

Now, Dr Smith has such an intimate knowledge of diseases of children in general and of this condition in particular that it is quite likely that the explanation of the fever is as he says But my experience of my own son's case and of all the other cases in which I have observed the condition leads me to a different conclusion I believe that the fever is due to an auto-intoxication from the products of fermentation of these particular mixtures of starchy foods The temperature shows, I think, that the attacks are much more like an auto sepsis than a catarrh Their more or less sudden onset and quick decline after a profuse perspiration appear to me very like what one would expect from absorption of a septic material from the alimentary canal The fact that in my experience these attacks cease when the particular foods which disagree are stopped, although all the other conditions of life remain the same, seems to show that these particular foods are the actual cause of the attacks We all know that *in very early life young children cannot digest starchy foods*, owing to the non-development of the pancreas at this time of life, and observations have been lately published in which at much later periods of life deficient pancreatic digestion has been observed I am inclined to think that in the cases in which I have observed the fever the pancreatic digestion is not proportionate to the age of the patient Starchy foods are not properly digested, especially certain starchy foods which by their structure (such as potatoes and carrots) or by their composition (such as combinations of sugar and starch in milk pudding and jams) are especially difficult of digestion As a result, undue fermentation of these foods takes place in the alimentary canal and causes the fever As the child grows older the power of his pancreatic digestion increases and so the cause of the fever gradually ceases The fact that a dose of mercury much assists these cases is, I think, in favour of this hypothesis, for calomel and blue pill are most powerful disinfectants of the bowel

I would notice one other point In my boy's case he always seemed worse when attending school I believe this is entirely to be explained by the fact that he hurried from breakfast to school and that his indigestion was increased by this proceeding But when his food was altered he still hurried from breakfast to school and *yet no attack of fever ever occurred* In cases of fever in children for which no obvious cause can be found it will therefore be advisable to try the effect of the dietary that Dr Smith and Sir Thomas Barlow recommended for my son

Exeter

AN ANALYSIS OF 150 CASES OF DEATH FROM BRONCHO-PNEUMONIA

BY PERCY HARDY, B A, M B, B C CANTAB,
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THE cases under consideration are the total number which occurred, in children under 13 years of age, at the London Hospital from Feb 1st to Dec 31st, 1903, and of which post-mortem examinations were made Drawn, as they all were, from the East end of London, the children were among the poorest to be found anywhere in England and lived mainly under the most adverse circumstances The results of this analysis are no doubt very different from those which would be obtained from investigating cases of death from the same disease occurring in children of the middle and upper classes, and this applies especially to the effect of the manner of feeding I shall endeavour to show in this series that the feeding of the children by bottle instead of at the breast *increases the mortality enormously*, *but it must be* remembered that the former method of feeding means in the majority of these cases that the children get—not other milk so prepared that it resembles more or less completely human milk, as would often be the case in children of the middle and upper classes—but anything and everything which their parents eat and *which they can be made to swallow* *Thus* nothing is commoner in the East-end of London than for a mother to answer a question as to the feeding of her infant in arms by saying "It has just the same as what we have" No cases of acute miliary tuberculosis have been included, and indeed in only four out of the 150 were there any obvious signs of tuberculosis about them, and these were as follows, a caseating nodule at the apex of the left lung in one case, a healed calcareous nodule at the apex of the left lung in one case, and caseating mesenteric glands in two cases It perhaps is interesting to note in passing that there were no less than 23 of these children brought to the hospital in a moribund condition I have classified the results thus —

I —AGE AND SEX

1 *Age.*—All of the children were under 13 years of age

8 under 1 month *
3 between 1 and 2 months
9 " 2 " 3 "
20 under 3 months
17 between 3 and 6 months
18 " 6 " 9 "
18 " 9 " 12 "
73 under 1 year
27 between 12 and 18 months
19 18 24 "
119 under 2 years

119 (*carried forward*)
13 between 2 and 3 years
6 " 3 " 4 "
138 under 4 years
0 between 4 and 5 years
2 " 5 " 6 "
3 " 6 " 7 "
1 " " 8 "
1 " 8 " "
1 " 9 " 10 "
1 " 10 " 11 "
2 " 11 " 12 "
1 " 12 " 13 "
150

* *Of the eight children under the age of one month one was six days* old and seven were 14 days old

2 *Sex*—85 of the cases were those of males, while 65 were those of females

II —CAUSES

A —*Predisposing Causes*

1 *Feeding* —In counting up the number of breast-fed and bottle fed children respectively the following has been the principle adopted A child has been considered breast fed if he has been reared on the breast for a greater period than four and a half months or, if the child be less than nine months old, for a greater period than half his life, if fed on the breast for less than this he has been considered bottle-fed The instances in which this rule has had to be followed are —

Counted as Bottle fed

Age	Breast-fed for—
7 months	1 month
8 "	2 months
9 "	1 month
10 "	3 weeks
7 "	6 "
7 "	5 "
9 "	2 "
4 "	3 "
1¼ years	3 months
1½ "	2 "
1¾ "	4 "

Counted as Breast fed

Age	Breast fed for—
10 months	7 months
1¾ years	5 "
2½ "	8 "

On this plan it was found that out of the 64 cases of children under four years of age in which the method of feeding was known 32 were breast fed and 32 were bottle-*fed—that is, the deaths from broncho pneumonia were equal*

In order to determine the *average* proportion of breast fed to bottle fed children for that part of London 78 children who were brought to the hospital, either because of accidents, such as burns, scalds, and the like, or for other reasons than for advice or treatment and including no cases in which they were *brought for any medical* disease, were taken Of these it was found that nine were bottle fed—that is, 11 5 per cent —and 69 were breast-fed—that is, 88 5 per cent But it has just been shown that the number of deaths from [illegible] and breast fed childre [illegible] ality among bottle fed [illegible] it is, *the mortality from broncho pneumonia is 7 7 times as great in bottle fed as in breast fed children*

2 *Rickets* —There were well marked signs of rickets in 25 of the 150 cases, or 16 7 per cent Of the 95 cases between the ages of six months and three years there were 21, or 22 1 per cent while of the 59 cases between the ages of one and three years—the rickety period *par excellence*—there were no less than 15, or 25 4 per cent, showing well marked signs of this disease

B —*Exciting Causes*

1 *Acute specific fevers* —(*a*) Measles —In 15 cases the disease occurred during, or followed immediately on, an attack of measles Of these, four patients were under the age of one year, five were between one year and two years,

three between two and three years, two between three and four years, and one was between six and seven years. (*b*) Diphtheria.—12 cases occurred during an attack of diphtheria. Of these, one patient was under the age of one year, six were between one and two years, two between two and three years, and three between three and four years. (*c*) Whooping-cough.—Of the seven cases in which the child was suffering from whooping-cough two patients were under the age of one year, three were between one and two years, and two were between three and four years.

2. *Meningitis.*—Eight cases occurred during an attack of meningitis. Of these five were of the epidemic cerebro-spinal type while two were those of suppurative meningitis secondary to suppurative otitis media. In one case the skull was not allowed to be opened but the child presented the symptoms and signs of meningitis.

3. *Suppurative otitis media.*—There were five cases of suppurative otitis media, three affecting the right ear alone, not any affecting the left ear alone, and two affecting both ears.

4. *Pyæmia.*—In three cases the broncho-pneumonia was part of a general pyæmia.

5. *Anæsthetics.*—In three of the cases the broncho-pneumonia was thought to be probably due to the administration of an anæsthetic which preceded the attack.

6. *Typhoid fever.*—Two of the children were suffering from typhoid fever.

7. *Scalds and burns.*—There were severe scalds preceding the illness in two instances. In one case, brought in dead, the skin showed signs of a superficial burn which had probably occurred several days previously.

In one case the broncho-pneumonia followed the impaction of a coin in the œsophagus and in another it was secondary to erysipelas. The onset of the illness was marked by an attack of diarrhœa and vomiting in 21 of the cases.

III.—MORBID ANATOMY.

1. *Distribution.*—The right lung was alone affected in nine cases, the left being alone affected in nine cases also. Both lungs were affected in 132 cases.

2. *Variety.*—(*a*) Confluent or massive broncho pneumonia (in which one or more lobes were completely solid and resembled to a greater or less extent lobar pneumonia).—Of this condition there were six instances, one being of the right lower lobe, two of the left lower lobe, and one of both lower lobes. In two cases nearly the whole of both lungs was solidified. (*b*) Suppurative broncho-pneumonia.—Of the 15 examples of suppurative broncho-pneumonia four were associated with suppurative otitis media, four with empyema (of these two with purulent pericarditis also), two with peritonitis, and three were part of a general pyæmia, while one occurred with acute suppurative periostitis.

3. *Coexisting pleurisy.*—(*a*) Acute fibrinous pleurisy.—Of the 15 cases in which this condition was present, in four it affected the right pleura only, in five the left pleura only, and in six it affected both pleuræ. (*b*) Pleurisy with effusion.—i. Serous: This was only present in one instance. ii. Purulent (i.e., empyema): there were 16 cases in which this condition was present, six affecting the right pleura, eight the left pleura, and two both pleuræ.

My sincerest thanks are due to Dr. R. N. Salaman for his kindness in placing all the post-mortem records, which he had so ably classified, at my disposal, and to the members of the staff and registrars of the London Hospital for their permission to use the clinical notes of the cases under consideration.

Nottingham.

A PLEA FOR THE MORE EXTENSIVE USE OF TUBERCULIN AS A CURATIVE AND PROPHYLACTIC MEASURE.

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IN a recent article Dr. C. Spengler of Davos reports two cases, verified by necropsy, of miliary tuberculosis cured with tuberculin. In the German literature it is easy to find records of many cases illustrating the utility of tuberculin as a therapeutic agent. In this country its use for curative purposes is almost in abeyance. I believe this to be a concession to popular prejudice rather than the result of unfavourable experience; indeed, I find that superintendents of sanatoriums have often no experience in the matter. Yet the clinical results more than justify the use, even if it were impossible to give any rational explanation of the action of tuberculin. But there is every reason for believing that it does stimulate the production of protective bodies against the tubercle bacillus. Although it looks like increasing the dose of poison, the injection of tuberculin is not really contra-indicated by the pre-existence of infection. For at the site occupied by the tubercle bacilli, in a progressing case, the cells are obviously too weak to resist the invader. But the other cells of the body have no opportunity of producing protective substances in the absence of a suitable stimulus, and the tubercle bacillus with its products does not come to them. It is the tuberculin which supplies this stimulus and it has been definitely shown by A. E. Wright that the injection of tuberculin leads to the increase of at any rate one class of protective bodies.

Since its introduction I myself use only the Neu-Tuberkulin (Bacilli Emulsion) of Koch and I proceed according to the instructions supplied with it, avoiding violent reactions. For the first part of the time the patient is kept in hospital; later, when the dose has reached 0·75 cubic centimetre, above which I do not usually go, one injection is given every week in the out-patient room, the patient remaining at home on the following day. But I never repeat an injection until the patient has clinically recovered from the one before. The total period of injections extends over three to six months.

In my own experience I have not seen any other of what may be termed the non-specific forms of treatment produce results approaching those of tuberculin in cases in the same stage of the disease. Many patients, of course, improve or recover under ordinary treatment or in sanatoriums. But such cases lack the specific resistance induced by the tuberculin treatment and easily relapse. The tuberculin treatment, like every other, has also its failures to record, but not, I think, so many, all things being equal, as the sanatorium treatment.

The best method is the combination of tuberculin and sanatorium treatment, first insisted on by Petruschky. But the latter portion is not always available and is expensive; the former can more often be carried out.

Now that the effects of tuberculin can be gauged it would seem rational to use it also prophylactically, especially in cases of obvious tuberculous diathesis, the predisposition of which it may be possible to gauge by Wright's methods. It seems to me from an examination of the evidence that in refusing to make therapeutic use of tuberculin (in suitable cases) the physician assumes the grave responsibility of rejecting one of the very small number of *specific* remedies for disease.

Leeds.

A CASE OF PERFORATED DUODENAL ULCER; OPERATION; RECURRENT HÆMORRHAGE; GASTRO-ENTEROSTOMY; RECOVERY.

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AND
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AS the number of cases of perforated duodenal ulcer with operation and recovery is at present very limited we have thought that it is desirable to publish notes on the following case. The clinical history commenced some three years ago.

The patient, a man, aged 42 years, had an attack of hæmatemesis in June, 1901. This was treated on ordinary lines and quickly ceased. The stomach was found on examination to be somewhat dilated. After the attack he was apparently restored to his usual health, but in August of the same year a second hæmorrhage occurred which again quickly subsided with the same treatment as before. These attacks recurred at the following dates: March, 1902; October, 1903; and January, 1904; in the interval the patient was apparently well. Nausea and the vomiting of brown fermented fluid usually preceded the attacks of hæmorrhage Pain was never a prominent symptom although at the time of the hæmatemesis there was much abdominal discomfort and perhaps some pain of a "colicky" description The physical signs of dilatation became more and more pronounced There was no tenderness but always much "splashing" This could be heard *occasionally even at a distance from the patient on sudden* movement—i e, turning in bed or on a couch The contents of the stomach could be felt to strike against the thumbs when the hands were placed on each side of the abdomen over the epigastric region General nutrition was well maintained, the patient never becoming emaciated As " [illegible] ceased and hæmorrhage recu [illegible] thought desirable to put him [illegible] a milk diet and to keep him at rest in bed *He* was seen in consultation *with Dr* J F Goodhart in February, who advised further rest and a continuance of the milk diet The consultation was held with the object, if possible, of determining the exact cause of the hæmorrhage and of locating it It was thought possible that the bleeding was associated with hepatic trouble, and the exhibition of small doses of magnesium sulphate was decided on with the object of lessening any congestion of the liver that might be present and of aiding the portal *circulation Under this treatment* the patient appeared to improve and after several weeks' rest was allowed to get up and by April 3rd was apparently quite himself and was taking ordinary food On the night, however, of that day he had a great deal of abdominal pain and during the night was repeatedly sick vomiting brown fermented and very offensive fluid in much larger quantity than had been ingested within the previous 24 hours On seeing him all food was stopped by the mouth and he was treated as before, it being *hoped that the attack would subside as hitherto* On the 4th hæmorrhage recurred and he was in a good deal of pain As his condition was obviously serious, the hæmorrhage being more severe than in previous attacks, Mr Allingham was asked to see him, which he did on the afternoon of the 5th By that time as the bleeding had ceased and the patient's condition had improved, there being no pain and but little discomfort, it was thought best to continue the treatment hitherto adopted and not to operate for the dilated *stomach for ten days or so in order* to give the patient time to rally from the effects of the bleeding During all these attacks of hæmorrhage there was never any bright-coloured blood vomited, it was of the "coffee ground" character, and the stools for some days afterwards were quite black The character of the blood vomited doubtless was a sign that either it was due to repeated small hæmorrhages in the stomach or hæmorrhage beyond the pylorus with regurgitation At 10 P M on April 5th, whilst *the patient* was *absolutely at rest in bed, he* was *seized* with sudden intense pain in the abdomen which radiated upwards over the hepatic region and downwards to the right inguinal region with much pain in the right testicle He was intensely collapsed and had raised himself into a sitting posture with the object of relieving his agonising pain From the history of the case in conjunction with the onset of these symptoms

dulness was present or absent It was then decided to ask Mr Allingham to operate and he was accordingly summoned In the meantime hypodermic injections of morphine were given The temperature was subnormal and the pulse rate was from 120 to 130 On Mr Allingham's arrival operation was decided on

The anæsthetic was administered by Dr E Chittenden Bridges An incision was made in the median line from the ensiform cartilage to just above the umbilicus about five inches in length Immediately on opening the peritoneal cavity fluid welled up and, in short the abdomen was full of the contents of the intestine The stomach was carefully drawn out of the wound and examined both anteriorly and posteriorly but no perforation could be found It was notably dilated On further examination a large sloughing ulcer of about the size of a penny was discovered in the *duodenum, about two inches from the* pylorus *This* was carefully sutured The abdomen was thoroughly flushed with boiled water and as far as possible cleansed by repeated sponging The abdominal wound was then closed and a long gauze plug was left in the upper and lower parts of the wound, the abdomen being allowed to remain full of sterilised water with the object of diluting as far as possible any intestinal contents that might remain

The patient was in such a grave condition of collapse that although the question of performing gastro enterostomy was considered it was decided that it was impossible to perform it in his then condition One thirtieth of a grain of strychnine was injected during the operation The patient was put back to bed and brandy was injected hypodermically These hypoderms of brandy were repeated at intervals as occasion arose and nutrient enemata were given every four hours Very little pain followed the operation and the patient gradually rallied Nothing was given by the mouth for 36 hours when one teaspoonful of plasmon was cautiously administered every half hour A slight rigor occurred about 24 hours after the operation 48 hours after the drachm doses of plasmon were stopped as hiccough occurred, a turpentine enema was given, part of which was retained The enema was repeated on the 10th with some success Plasmon and brandy were recommenced on the 10th, two drachms being given every hour The patient was fairly comfortable and passed flatus freely On the 12th, six days after the operation, the plugs were removed under an anæsthetic During this time the pulse had varied between 112 and 140 and the temperature between 97° and 99 6° F On the 13th the temperature rose to 101° The feeding by the bowel was continued, also occasional hypoderms of strychnine and brandy were given The plasmon was increased to four drachms alternated with the same quantity of peptonised milk The condition had in all respects improved The stitches were removed on the 16th On the 19th hiccough recurred accompanied by a feeling of nausea and abdominal pain *Food was stopped Hæmatemesis recurred* with much pain and collapse Adrenalin in five minim doses was administered every hour, and for the collapse brandy and strychnine were [illegible] and a sixth of a grain of m [illegible] was kept going with nutri [illegible] made to give nourishment by the mouth for 48 hours, when plasmon and brandy, two drachms at a time, were given every hour The bowels were induced to act by hot water enemata and there was *evidence of old hæmorrhage in the actions* Raisin tea (two drachms at a time) was given alternately with plasmon On the 25th a thrombus formed in the left leg, which was greatly swollen In other respects the patient appeared to be making progress, feeling no discomfort after the plasmon and raisin tea, which were continued in slightly increased doses but never exceeding a total of 20 ounces in the 24 hours Occasionally whey and white of egg were given On May 4th hiccough again *occurred and on the 5th nausea*, vomiting, and hæmorrhage once more threatened to put an end to the patient's life Adrenalin was again given The hæmorrhage on this occasion was more copious than hitherto and the patient's condition seemed hopeless as in spite of the extreme care which had been exercised in feeding him it was quite clear that the stomach did not empty itself and that the ulcer was not healed On the 7th raisin tea was again given in two-drachm doses and on the 8th similar quantities of plasmon The temperature on the 6th sank from 100° at 2 A M to 96 6° at 6 P M The pulse was 110 As the patient was losing strength and becoming much emaciated it was felt hopeless to persevere with the present course of expectant treatment and the question of performing gastro enterostomy was raised Mr Allingham concurred in the opinion that nothing remained but to do this and on the 11th Dr Bridges again administered an anæsthetic and Mr Allingham performed posterior gastro-enterostomy

An incision was made parallel with, and to the left of, the original wound between five and six inches in length The stomach had greatly diminished in size since the first operation and the ulcer was quite shut off by adhesions and could not be seen The patient stood the operation well and from this time there was no further trouble Liquid food was commenced on May 13th and increased gradually By the 20th he was taking chicken broth, milk and barley water, Benger's food &c The stitches were removed on the 21st, *and within a fortnight of the second operation* he was taking solid food in fair quantities, and within three weeks he was quite convalescent There has been no further trouble at all

A CASE OF HÆMATOPORPHYRINURIA NOT DUE TO SULPHONAL.

BY G. LESTOOK THORNTON, M.A. CANTAB., M.R.C.P. LOND., M.R.C.S. ENG.

On July 13th of this year I was summoned to attend a man, aged 45 years, of good social standing and no occupation, who complained of griping pain in the abdomen, nausea, and slight diarrhœa. The patient's family history was good and there was nothing of ill omen in the account that he gave of his previous health. He appeared to have been in good health until July 8th, on which day he suffered from diarrhœa with abdominal discomfort. On the 9th the diarrhœa ceased and on the 10th he felt quite well. On the 11th he travelled to Bristol, returning to Exmouth on the 12th, and in the evening of this day he complained of headache which was followed in the night by slight sickness and diarrhœa, the last of these symptoms continuing until I saw him on the evening of the 13th.

The patient was a man above the average height and strongly built. He showed signs of a very nervous temperament. The temperature was 98° F. in the axilla (he had taken it himself in the morning and found it to be 100·5°). The pulse was 54 and of high tension quality. The tongue was moist and slightly coated all over with white fur. With the exception of an accentuated aortic second sound nothing abnormal was noted on examination of the chest. The abdomen moved freely with respiration and there was no marked distension. There was no evidence of enlargement of the liver or the spleen. There was slight tenderness over an area corresponding to the ascending and transverse portions of the colon. No motion had been reserved for my inspection but I learnt from the patient that there had been some eight or nine during the day and beyond the fact that little had been passed with each motion I could obtain no definite information respecting them. He was ordered a mixture containing subcarbonate of bismuth, bicarbonate of sodium, and salol, the last of which was prescribed in five-grain doses. The mixture was to be given every four hours and his diet was limited to milk.

I saw him on the morning of July 14th and found that there had been three motions during the night, which motions consisted chiefly of blood-stained mucus and bright blood. At this interview the patient expressed some alarm at the colour of the urine which he had passed during the night and on that morning. The specimen which had been reserved for my inspection had been passed directly into a clean utensil and there was no question of contamination in any way. The appearance was that of an average good port wine and a port wine, moreover, which had been carefully filtered, so absolutely free was the urine of any sediment and so intimately was the pigmentation a part of the fluid. On subsequent examination of a sample (which I centrifugalised) the results of the analysis were as follows. Amount in 24 hours less than normal; colour, port wine; reaction, feebly acid; specific gravity, 1028; albumin, slight cloudiness on heating but no resulting deposit; no reaction with nitric acid in the cold or with Esbach's solution; sugar, *nil*; microscopical examination of the very slight deposit showed the presence of a few uric acid and urate crystals; no blood cells were present. On treating the urine with freshly prepared ozonic ether and tincture of guaiacum no reaction was obtained, thus excluding the presence of hæmoglobin. The presence of pure blood had been previously negatived by centrifugalisation and examination of the deposit, and the result was further confirmed with the test just mentioned. Although I had no facility for making use of the further spectroscopic tests there could be no question but that the pigmentation was due to the presence of hæmatoporphyrin.

In seeking for the cause of this condition, that one to which it is most commonly ascribed could be put out of court, for the patient had neither taken sulphonal on his own account nor at my direction. On referring to the subject in Osler's "Theory and Practice of Medicine" I found the most obvious solution, for Osler states that 'hæmatoporphyrinuria has occurred in patients suffering from intestinal hæmorrhages. I could find no reference in the larger text-books on therapeutics to such an occurrence after the taking of salol, but in view of the uncertain action of this drug I omitted it from the prescription as an extreme precaution.

The further progress of this case was uneventful, the simple colitis with which the patient was evidently affected responding to appropriate treatment. On July 15th the urine had still a distinct port-wine colour. On the 16th the colour was that of rich orange. On the 17th the urine had the appearance of mere high pigmentation, whilst on the 18th there was nothing abnormal in this respect. Beyond occasional bloody mucus in the stools there had been no evidence of hæmorrhage on these days.

This case is of interest on account of the few recorded in which the condition has occurred independently of sulphonal administration. The literature on the subject is at the present time meagre. Halliburton[1] (writing on hæmatoporphyrin) states: "It occurs in certain invertebrate pigments and may also be found in certain forms of pathological urine. Even normal urine contains traces of it." Osler,[2] in his Text-book on Medicine, says that "hæmatoporphyrin occasionally occurs in the urine. It was first recognised by Hoppe-Seyler. Nencki and Seiler determined its exact formula and the former demonstrated that the only chemical difference between hæmatin and hæmatoporphyrin is that the latter is simply hæmatin free from iron. It has been found in the urine in pulmonary tuberculosis, pleurisy with effusion, acute rheumatism, lead poisoning, and intestinal hæmorrhages. This pigment has been found very frequently after the administration of sulphonal." Hutchison and Rainy[3] state that hæmatoporphyrin sometimes occurs in large amounts in the urine of patients who are taking sulphonal and that the occurrence is more common in females than in males. These authors also draw attention to the grave significance of the symptom when caused by sulphonal. Rose Bradford,[4] writing in Allbutt's "System of Medicine," mentions hæmatoporphyrin both amongst the normal and abnormal pigments of the urine. The same author assigned to Dr. A. E. Garrod the credit of having first discovered traces of it in normal urine. Rose Bradford also tells us that hæmatoporphyrin has been observed in rheumatic fever, Addison's disease, peritonitis, and cirrhosis of the liver. He also states that various drugs (not mentioned by name) have, in common with sulphonal, the property of producing this condition of the urine. Lastly, at a meeting of the Pathological Society of London held in March of this year[5] Dr. Garrod gave a survey of the few recorded cases of hæmatoporphyrinuria not due to sulphonal. Dr. Garrod referred briefly to 12 cases and drew a distinction between them and the very common ones where the increase above the normal amount of hæmatoporphyrin was not such as to affect materially the colour of the urine. In a large proportion of these 12 cases the condition was of long standing, in others there was occurrence at intervals, whilst in one instance paroxysmal hæmoglobinuria was simulated. In only two cases were the grave symptoms present which accompany hæmatoporphyrinuria due to sulphonal. As to the cause of this phenomenon Dr. Garrod considered that the evidence is in favour of perversion of hæmoglobin catabolism rather than that of excessive hæmolysis. He also mentioned the morbid changes met with in the liver in hæmatoporphyrinuria both when and when not associated with the taking of sulphonal.

In the case I have recorded the most obvious cause would be that a somewhat severe hæmorrhage had taken place high up in the colon, as there was never at any time tenderness over the sigmoid flexure and nothing abnormal could be detected on rectal examination. My case agrees with the majority of Dr. Garrod's 12 cases in that there were no grave symptoms present, but differs in that there was no history of the symptom having been previously present, at any rate in such a degree as to attract the attention of the patient.

The scant literature on the subject and the paucity of the few published cases of hæmatoporphyrinuria occurring unassociated with sulphonal seem to make it worth while to place this one on record.

Exmouth.

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[1] Halliburton's Handbook of Physiology, fourth edition, p. 429.

[2] Osler: Principles and Practice of Medicine, fourth edition, p. 865

[3] Hutchison and Rainy: Clinical Methods, p. 339.

[4] Allbutt: System of Medicine, vol. iv., pp. 286, 290.

[5] THE LANCET, March 5th, 1904, p. 654.

THE CHANNELS OF INFECTION IN TUBERCULOSIS IN CHILDHOOD

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DURING the last few years, but more especially since the address of Professor Koch at the Tuberculosis Congress of 1901, this subject has aroused great interest and considerable discussion His statement that tuberculous milk is not a source of danger to the human subject has, speaking generally, met with strong opposition both in this country and abroad Indeed, some observers have recently gone to *the other extreme in contending that practically all cases of* tuberculosis at any age can be traced to the ingestion of tuberculous milk in infancy or childhood The majority of observers, however, steer a middle course and the weight of evidence seems at present to rest with them The question is a difficult as well as an important one and it is only when a large mass of evidence along the different lines of investigation has been accumulated and weighed that a definite and satisfactory conclusion can be arrived at Partly with this object I have analysed the post mortem records of 339 cases of tuberculosis in children of all ages up to 14 years, taken from the East London Hospital for Children, and I must express my indebtedness to Dr W P Branson, the pathologist at that institution, for allowing me to have access to these records The following table shows the ages at death of all the patients and the number at each age infected through the different channels

TABLE I —*Showing the Ages at Death of all the Patients and the Number at each Age infected through the Different Channels*

Ages.	No of cases	Primary infection			
		Thoracic.	Abdominal	Pharyngeal	Doubtful
Up to 6 months	14	12	0	1	1
6 to 12 ,	58	39	7	3	9
1 , 2 years	90	52	16	6	16
2 „ 3 „	51	30	16	0	5
3 , 4 ,	30	19	5	1	5
4 „ 5 „	27	18	6	0	3
5 „ 6 „	18	14	2	0	2
6 „ 7 „	14	9	5	0	0
7 „ 8 „	12	7	2	1	2
8 „ 9 „	4	2	1	0	1
9 „ 10 „	6	3	0	1	2
Over 10 years	9	4	4	0	1
Age not stated	6	3	0	0	3
Totals.	339	212	64	13	50

It will be noticed that 162, or 48 *per cent*, *occurred* during the first two years, and 270, or 80 per cent, during the first five years, whilst there is a steady decline in the proportion amongst older children This does not necessarily indicate a greater amount of tuberculosis in terms of children living under five years, though from our collateral knowledge there is reason to believe that this is so

The following are the recognised methods of infection (1) inhalation, (2) ingestion, (3) inoculation, and (4) placental, but for all practical purposes our attention may be confined to the first two, as the other methods are exceedingly rare I
settle on any part of
mouth to the alveol
tends to show that under ordinary conditions the inspired air is free from foreign particles by the time it reaches the larynx[1] On the other hand, dust inhalation experiments show that when foreign particles are present in great numbers they may be inhaled even into the alveoli, and this is seen too in cases of anthracosis and other dust diseases. It is possible, however, that the children of the poorer class, living as they do so frequently in close, badly ventilated, dirty, and tubercle infected dwellings, are subjected occasionally to the inhalation of large numbers of tubercle bacilli and so a repetition of the dust experiments may occur At any rate, 49 per cent of my cases were infected apparently through the mucous membrane of the trachea or larger bronchi Of the upper respiratory passages *the pharyngeal tonsils, the middle ear*, and the faucial tonsils have been shown to be sometimes the points of entry of the disease Bacilli passing through mucous membranes at any point are soon found to be present in the adjacent lymphatic glands, showing the course usually taken by the bacilli when invading the system In the case of the fauces or naso pharynx the cervical glands suffer and the tracheal, bronchial, or pulmonary glands when the bacilli enter through the mucous membrane of the trachea or bronchi

Ingested bacilli are liable to settle on any part of the alimentary tract from the mouth onwards The mouth, *fauces, and pharynx are thus common both to inhalation* and ingestion and infection through these parts would leave a doubt as to its sources The œsophagus is, except during swallowing, quite empty and thus food or foreign particles are only for a very short time in contact with its mucous membrane Tubercle of the œsophagus is extremely rare and when occurring is as likely to be due to infection through the blood stream as to food The stomach, also, is rarely tuberculous but the intestines not infrequently Bacilli passing through the intestines would be conveyed to *the mesenteric and sometimes other abdominal glands and* these glands are frequently tuberculous

The next point for consideration is the importance of tuberculosis of the lymphatic glands in children In over 90 per cent of my cases the lymphatic glands were obviously tuberculous, whilst in *68 per cent they were the primary* foci The great activity of the lymphatic system in early childhood and the rapidity with which the glands enlarge after some peripheral irritation, such as eczema, are matters of common knowledge It is not surprising, therefore, that they do not show any great powers of resistance against the tubercle bacillus, which, as Carr has shown,[2] usually invades the system primarily by the lymphatic channels, though it may be conveyed secondarily to lymphatic glands by means of the blood stream *This reasonable view has been taken, I* think, by all observers except so far as it applies to the tracheal and bronchial glands, and for the infection of these there are, as Pryce Jones[3] has pointed out at least five different methods suggested 1 Through the trachea and bronchi, the most natural suggestion 2 By the pharyngeal lymphatics In this case a continuous chain of caseous glands should extend down the neck as far as the thoracic inlet and the thoracic glands would be infected secondarily Nine of my cases showed this method of infection 3 Through the œsophageal mucous membrane As mentioned above, this must be very rare 4 From the intestinal mucous membrane[4] or mesenteric glands, either by three ways suggested by Woodhead or by the thoracic duct In the former case primary infection of the mesenteric glands is presupposed and in five cases I was able to trace this line of spread With regard to the thoracic duct, Ravenel[5] has suggested *that tubercle bacilli taken with the food might* pass through the intestinal mucous membrane and be carried through the mesenteric glands by the lymph flow directly to the thoracic duct He was led to this opinion by certain feeding experiments on animals, when a small proportion of the cases showed tuberculous lesions in the thorax alone Sidney Martin,[6] Baumgarten,[7] and others with similar experiments have not confirmed his observations, so that this line of infection must be considered rare The result of an infection through the thoracic duct should be miliary tubercles throughout the lungs and perhaps other organs with only secondary lesions in the bronchial glands 5 Infection by the blood stream must, if primary in these glands be very rare If, however as might be suggested the route is by the blood stream directly from the intestinal mucous membrane, miliary tubercles, first in the liver and then in the lungs, should result and the bronchial glands the lesions in the thorax and abdomen were too far advanced to give any clue as to the method of infection.

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[1] Thomson Practitioner July, 1901

[3] Lubie [illegible] vol xv, 1902.

[6] Transactions of the Medical Society of London vol xvi

[7] Ueber Tuberkel w Tuberculose, [illegible]

No mention has been made of cases of inoculation as in tuberculous warts or in lupus. These cases almost always remain local and are of secondary importance in a paper of this nature. The same may be said of placental infection or congenital tuberculosis on account of its rarity. Such cases seldom are admitted into hospitals as they rarely live beyond the age of a few weeks.

In conclusion, if we regard the middle-ear cases as infected by inhalation, the tonsil cases as an alimentary infection, and the remaining pharyngeal cases as doubtful, since it was not certain whether the infection had entered by the tonsils or naso-pharyngeal adenoids, then inhalation would account for 216 cases, or 63·7 per cent., and ingestion for 65, or 19·1 per cent., the remaining 17 per cent. being of doubtful origin. So far, therefore, as can be judged from these methods of investigation the danger from inhalation far exceeds that from the ingestion of tuberculous material. With regard to the importance of tuberculous milk, however great the potential danger may be, the real danger is in many quarters greatly exaggerated, probably owing to the children not drinking the tuberculous milk of the virulence and in the quantity usually affirmed. Still, whether the danger has been exaggerated or not, the fact that nearly 20 per cent. of the cases of tubercle amongst children in the large towns in this country are primarily alimentary makes out a good *primâ facie* case against tuberculous milk, and I believe it will be shown that one of the chief differences between the conditions of life amongst children at home and abroad which could have any effect in predisposing to primary abdominal tubercle exists in the greater frequency of tuberculous milk in this country. But whilst attention is rightly being directed towards the restriction of the sale of tuberculous milk, it is chiefly to the improvements in the conditions of life—such as cleanliness, ventilation, disinfection, and better housing—that we must look for the diminution of tubercle amongst children.

Brighton.

SOME POINTS IN THE PREVENTION OF EPIDEMIC DIARRHŒA.

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MEDICAL OFFICER OF HEALTH, SOUTHEND-ON-SEA.

Many adhere to what they term "the well-established fact" that "when the subsoil temperature at a depth of four feet below the surface reaches 56° F. diarrhœic affections become prevalent each summer." The observation was originally made by Dr. Ballard, but I have shown[1] that though the four-foot earth temperature at 56° and the advent of diarrhœa are frequently coincidental they are not always necessarily so. My own opinion is that the usual seasonal circumstances during July, August, and the first half of September are in favour of contamination of food (especially milk) firstly and chiefly by flies and secondly by dust. The warm weather favours the rapid multiplication of deleterious germs deposited by flies and dust. I am quite convinced from continued observations that the common housefly is the principal agent in carrying diarrhœa-causing bacteria to food. I have always found that the districts which have most diarrhœa are those which are most infested with flies, particularly if in the neighbourhood of refuse heaps, manure pits, stables, midden-privies, and similar collections of organic refuse, which serve as breeding places for flies as well as for the noxious germs which they carry thence to the food-supplies in adjoining houses and shops. When once a case of diarrhœa occurs during the fly season (particularly in poor neighbourhoods, where houses closely adjoin, where the hard-working mother of a family has so much to do that she does not always immediately remove soiled napkins, &c., but leaves them about exposed) it is easy to see how flies can readily spread infection to adjoining houses.

Where municipalities neglect to flush the streets properly, desiccated horse dung (as first suggested by Dr. F. J. Waldo) and other deleterious organic dust which is commingled with ordinary street dust must also play a part in the causation and spread of diarrhœa when gusts of wind blow such dust on to exposed food, but I am of opinion that the part played by dust is but small in comparison with that played by flies. I have no hesitation in asserting that the number of cases of epidemic diarrhœa occurring during any summer will be found to vary directly with the number of flies present in any given season. I am not alone in this opinion. Many medical officers of health and others have ascribed to the domestic fly some part in the spread of diarrhœa, but my opinion is that the fly is the chief factor in epidemic diarrhœa as the carrier of infection, just as the mosquito plays a similar rôle in connexion with malaria. This opinion is shared by Dr. Edward Blake who in his recent interesting work on "Colitis"[2] italicises this sentence: "The fly season is the diarrhœa season."

Where milk-supplies have been contaminated by careless milkers at the cowsheds the warm temperature of summer, *quâ* temperature, must play some part in the rapid multiplication of hurtful organisms. This no doubt accounts for the greater number of cases which occur independently of fly contamination. The essentials for putting a stop to the great waste of infant life every summer are: (1) Clean milk-supplies; (2) clean towns with well-organised systems of sewage removal, dust collection and disposal, and street watering; (3) clean homes, where sufficient domestic hygiene *prevails to understand the importance of clean utensils for* food, *the covering over of food to protect from dust and flies*, and personal habits of cleanliness; and (4) inhibition of fly life. This will largely depend on the previous requirements. Should any community enjoy the fulfilment of all these requirements I venture to think that that community will also enjoy a remarkable immunity from epidemic diarrhœa, no matter whether the four-foot earth thermometer registers 56° for the greater part of the summer or not.

In connexion with this matter I have recently had printed the following hints to householders in the hope of preventing much unnecessary diarrhœa.

Diarrhœa.

This disease is very dangerous and rapidly fatal in young infants. It is therefore necessary to know how to prevent it rather than to hope to cure it. Several causes contribute to this disease. Any or some or all of these causes may operate in a particular instance. It is important to know what they are and to take the necessary precautions to prevent all if possible. They are in one word—dirt. In more than one word they are: (1) unclean mill [illegible]
and bottles; (3) unclean hands; (4) [illegible]
air (from overcrowding, &c.); (6) un [illegible]

Diarrhœa is more common and fata [illegible] time. Why?

1. Because there are more flies, which settle on dirty refuse heaps, dirty closets, dirty napkins, &c., and then settle on the food or tumble into the baby's milk, or get into the open tin of condensed milk, or walk about the sugar.
2. Because there is more dust, which is blown in at the open window on to milk and other food left exposed.
3. Because germs are really very small microscopic plants, which, like nearly all other plants, grow best when the weather is warm.

Fortunately boiling will destroy nearly all germs. Therefore during the hot weather, to prevent young infants from getting diarrhœa from milk boil all milk directly it comes into the house. But this is not everything. If after milk is boiled it is put into a half-cleaned jug or cup or bottle, or is left exposed so that flies can settle on the margin or fall into it, it will rapidly become contaminated again. Therefore, after boiling always keep the milk in clean vessels and covered over with a clean cover. The milk should also be kept as cool as possible. A good plan is to stand the covered milk jug in a basin of cold water. A mother or nurse should always wash and dry her hands just before preparing the baby's meal. A large number of people in a room contaminate the air of the room and impart to it properties which will rapidly spoil milk. Therefore it is important not to allow several people to come into the kitchen or near the larder.

Every precaution should be taken to prevent flies settling on food and to destroy flies in the house. All animal and vegetable waste should be burned as soon as possible. If put into the dustbin or left about in the kitchen or larder they cause offensive smells and attract and breed flies. Cleanliness in every detail is the great preventive measure against diarrhœa.

When a case of diarrhœa occurs in a house great care should be taken to at once place soiled napkins, &c., in a disinfectant solution and to boil all infected articles as soon as practicable. If napkins, &c., are left exposed flies can settle on them and carry back infection to the baby or to other children in the same house or in neighbouring houses.

Another pamphlet is distributed which, among other matters, calls attention to the dangers of long-tube bottles, poor condensed milk, miscalled infant foods, &c., and gives simple directions for preparing milk for hand-fed infants according to age. Under present conditions of milk-supply the boiling of milk used for infant feeding is an unfortunate necessity, particularly during hot weather. Unless facilities exist for supplying pasteurised milk the simpler the processes recommended to the poor and ignorant the better. The pamphlet method of instruction has its limitations, but no doubt effects much good in some instances.

Southend-on-Sea.

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[1] Transactions of the Epidemiological Society, N.S., vol. xxii., p. 128.

[2] Blake: *Colitis*. H. J. Glaisher, London.

A CASE OF NEPHRITIS SIMULATING DIABETES INSIPIDUS

BY J BRUNTON BLAIKIE M D EDIN,
MARGARET STREET W
OR SICK CHILDREN

THE case described as diabetes insipidus by Dr A H Carter in THE LANCET of August 26th (p 588) has prompted me to narrate the following case which occurred in Sir Thomas Fraser's wards of the Royal Infirmary Edinburgh in the summer of 1897

The patient was a girl, aged 11 years who was admitted with the complaints of great thirst and the passing of large quantities of urine Her previous health beyond the fact that at the age of three years she had had jaundice and when six years old she had measles was stated to have been good There was no history of an attack of scarlet fever Ever since infancy she was said to have drunk large quantities of fluid, even when a baby her nurse noticed that she consumed much more milk than is usual in an infant of her age She was always thirsty and would drink any fluid to which she could get access if deprived of a sufficiency of water At times she was also exceedingly voracious For a few months previous to admission to hospital she had been getting rather weak and she was noticed to be languid and easily tired

On examination the patient was observed to be thin but not emaciated, she weighed 3 stones 1 pound The mouth was dry and the tongue was slightly furred The bowels were said to be usually constipated The circulatory system was apparently healthy the pulse tension was not increased nor was the vessel wall thickened The skin was rather dry and harsh Nothing abnormal was to be detected in the respiratory hæmopoietic or nervous systems The urine during the first ten days in hospital averaged 90 ounces, it was clear neutral or faintly acid of specific gravity from 1003 to 1006 and contained a faint trace of albumin, no tube casts were found The urea averaged 194 grains per diem

During the first two weeks she was in hospital she did not look seriously ill, but at the end of ten days it was observed that both the quantity of urine and the amount of urea passed began to diminish Four days later she complained of discomfort in the epigastrium, nothing abnormal could be discovered on examination but her general condition became more disturbed than could be accounted for by a simple stomach ache She was nervous and restless and the respiration began to become deep anxious, and jerky On the following day the bowels were very freely moved—the result of medicine—and she ceased to complain of the epigastric discomfort She however, now developed an acute pain over the left clavicle for which there was no apparent local cause Her anxiety and restlessness increased and she cried continuously The respiration had become even deeper and more jerky The tongue was furred, the pulse was 124 and bounding and the temperature was 97 4° F As the day advanced she became quieter but drowsy and weaker and complained of inability to swallow There was however no apparent paralysis During the last 24 hours she had passed about 40 ounces of urine By the following morning she had become unconscious, the right pupil was widely dilated and the left only partially so The pulse was weaker and the temperature was 97° There was commencing Cheyne Stokes respiration She gradually sank and died at 7 P M the same evening There was some twitching of the limbs before death

The post-mortem examination revealed no noteworthy morbid appearances except in the nervous and the urinary systems The brain substance was found to be œdematous, the grey matter of the cortex and the basal ganglia showed irregular patches of congestion The pons was studded throughout with numerous small hæmorrhages about one sixteenth of an inch in diameter These were of quite recent character, symmetrically arranged on the two sides and were more numerous in the middle of the pons Only a few small hæmorrhages were present in the lower part of the crura and one or two were seen in the upper part of the medulla The rest of the medulla showed general congestion of the grey matter but contained no hæmorrhages The following is the report on the kidneys "The left weighed two ounces and the right three ounces Both were extremely small, the capsule of each was adherent, the surface was somewhat irregular and showed extreme waxy pallor On section the cortex was enormously diminished especially in the left kidney, so as to constitute a mere line at places, with pyramidal cortex also diminished but to a less degree The whole kidney surface was of somewhat translucent yellowish white colour with only a few points and streaks of congestion at places There were numerous small cysts present both in the cortex and in the medulla, these were more numerous in the left than in the right kidney The Malpighian bodies appeared enlarged at places The condition was chronic nephritis with extreme contraction and atrophy probably following acute and subacute changes The extreme anæmia of the kidneys was very striking No waxy change was present

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Brook street W

DEATH CERTIFICATION[1]

BY WILLIAM BERRY, F R C S IREL, D P H,
SENIOR HON RARY MEDICAL OFFICER TO THE ROYAL ALBERT EDWARD INFIRMARY WIGAN MEDICAL OFFICER F HEALTH OF THE COUNTY BOROUGH OF WIGAN

I AM presuming to address you on a subject which interests me personally as a medical officer of health and interests also the registrar of deaths who as a rule is not conversant with the medical terms used or with the pathology of disease

Death certification gets very scant attention from the various teachers in the medical curriculum so that when a young man is launched forth fully qualified unless he has had an opportunity during his vacation of seeing some general or out door dispensary practice he is somewhat at a loss to record in exact terms the cause of death in many of

of Diseases as published by the
s of London or if he will adopt
adopted by some authors in their text books on medicine he is somewhat helped The best synopsis is that found in Tanner's Index of Diseases The death certificate book does not help him much although you will find a list in the first few pages of the book and you will also find the following remarks It is highly desirable that medical practitioners should use in their certificates of death only those terms which are recognised by the Royal College of Physicians of London The cause of death should be stated precisely and briefly, English names for diseases being used in preference to their equivalents in other languages Vague terms such as *decline consumption tabes cachexia*, &c should be avoided and *hæmorrhage* should not be assigned as the cause of death without indication of its origin and probable cause *dropsy* should never be returned as the cause of death without particulars as to its probable origin—e g in disease of the heart liver or kidneys Now I agree with these remarks although the list given is not in strict accord with the pathology as dropsy is only a symptom Precise and brief sh

of the cause
should denote
term should be
dropsy as befo is only a symptom, hyperpyrexia is only a symptom

Whilst thinking out this paper I came across the following[2] It is from the annual report of the Registrar General for England and Wales for the year 1902

> *Inadequate Certification* —The deaths of 0,170 persons during 1902 were attributed to causes that are practically useless for purposes of classification A much larger number of deaths from indefinite causes would have appeared in the report but for the systematic inquiries

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[1] Abstract of a paper read before the Wigan Medical Society on Sept. 1st, 1904

[2] Brit. Med Jour, August 20th, 1904 p 417

addressed to medical practitioners respecting deaths certified as due to dropsy, tumour, hæmorrhage, and certain other indefinite conditions. *In the course of the year* 4706 replies to these inquiries were received, resulting in most cases in a more precise classification of the causes of death. For example [illegible] alignant disease, 367 from tuberculous disease, [illegible] 153 from puerperal septic diseases, and 111 fror [illegible] ransferred to their proper headings, as a result c [illegible] ation so obtained.

I have taken somewhat haphazard from the list of returns for one year made to me by the registrar of deaths. These returns are also sent to the Registrar-General in London. The following are given as causes of death:—

1. Acute pneumonia.
2. Cardiac failure.

1. Scarlet fever 14 days.
2. Otitis media.

1. Bronchitis.
2. Cardiac failure.

1. Premature birth.
2. Asthenia.

1. Pneumonia two days.
2. Syncope.

1. Severe pressure during birth.

1. Acute mania.
2. Gangrene of both feet.

1. Broncho-pneumonia.
2. Cardiac failure.

1. Malignant tumour of colon 12 months.
2. Exhaustion.

1. Tubercular ulceration of stomach.
2. Exhaustion.

1. Enteritis.
2. Meningitis.

1. Bright's disease three months.
2. Hæmorrhage from brain one day.

1. Zymotic enteritis.
2. Collapse.

1. General tuberculosis.
2. Convulsions.

1. Severe burn on knee (left) nine months.
2. Disease of knee-joint probably tubercular.
3. Operation 24 days.
4. Pyæmia six days.

1. Senile decay.
2. Cerebral hæmorrhage.

1. Bronchitis with abscess one year probably tubercular.
2. Asthenia.

1. Cerebral hæmorrhage.
Coma.

1. Gangrene of foot.
2. Lymphangitis ten days.
3. Operation.
4. Exhaustion.

1. Scarlet fever and measles 20 days.
2. Bronchitis six days.

1. Teething.
2. Congestion of lungs.

1. Acute suppurative periostitis six days.
2. Exhaustion.

1. Valvular lesion of heart five and a half years.
2. Ascites 20 days.
3. Operation (tapping) two days.
4. Syncope.

1. Carcinoma breast (scirrhus).
2. Operation.
3. Recurrence.
4. Exhaustion.

1. Measles.
2. Pneumonia.
3. Cardiac failure.

1. Chronic nephritis.
2. Suppression of urine.

1. Chronic ovaritis.
2. Salpingitis 12 months.
3. Operation.
4. Syncope.

1. Acute congestive laryngitis five days.
2. Cyanosis.
3. Asphyxia.

1. Interstitial nephritis.
2. Embolism.
3. Heart failure.

1. Tubercular ulceration of intestines.
2. Diarrhœa.

1. Enlargement of liver.
2. Abdominal tumour.
3. Dropsy.
4. Heart failure.

Examples of Coroners' Verdicts.

Burns caused by ge [illegible]
Suicide [illegible]
Natural [illegible]
Burns b [illegible]
General break-up [illegible] juries while unloading on Lancashire and [illegible]
Burns by getting [illegible]
Self-neglect and alcohol.

You will see from this list that the certification is not *precise* and *brief* but is too full, and records in many instances symptoms for a disease. Tanner in his synopsis gives a good classification and one which meets all requirements.

[Mr. Berry here introduced an elaborate classification in tabular form which we are compelled to omit on account of its length. It contained 30 principal headings with a number of subdivisions under each.]

The Registrar's register is divided into columns and he has very little space for putting in the diseases. Although English is recommended by the Registrar-General as the simplest it is not always elegant or precise. The term "inflammation of the bowels" is unsightly and not precise and is much better expressed by "peritonitis" or "enteritis"; "inflammation of the lungs" also is better expressed by "pneumonia." Latin, I think, enables us to certify a cause of death precisely and briefly, and, again, it is not always wise to let the relatives know the cause of death in plain language; they are better pleased if the name of the disease has a jaw-breaking pronunciation and is a term not easily "understanded of the people." *Pew-monia* is a favourite disease from which many of our friends die, according to information supplied to us by relatives; the term certainly pleases the public.

In conclusion, I would suggest that a definite idea should be formed as to the filling up of the certificate and then the cause of death should be as brief as possible; if a primary disease is sufficient, then leave out the secondary one; for instance, "pneumonia acuta" is sufficient without putting "cardiac failure" or "syncope." Never give a third cause if possible.

P.S.—Since the above was written the following have been registered:—1. ——, aged three years: (1) acute toxæmia; (2) gastro-enteritis; (3) vomiting; (4) diarrhœa; (5) exhaustion; (6) collapse; (7) cardiac failure. 2. ——, aged seven months: (1) improper feeding; (2) rickets; (3) vomiting; (4) diarrhœa; (5) cardiac failure.

Wigan.

A NOTE ON THE PATHOLOGY OF LATERAL CURVATURE OF THE SPINE.

BY G. C. STEELE-PERKINS, M.D.

IT is not my intention to enter at all fully into the morbid anatomy and pathology of lateral curvature of the spine, as they have been fully dealt with by many authors. It will be sufficient to remark that in those cases in which there is a lateral deviation without rotation no structural changes are present; there are only weakness and want of development of the muscles. In cases in which there is lateral deviation with more or less rotation the changes present are dependent upon the amount of rotation that has taken place; in slight cases of this description little more than muscular wasting and relaxation of muscles are noticed, whereas in more advanced cases the changes include an alteration in the thickness of the bodies and intervertebral discs.

In severe cases the bodies of the vertebræ become very dense in structure on the side of the concavity and their cancellous tissue even becomes compact. The spinal muscles in severe and long-standing cases are often found to have undergone fatty degeneration and even fibroid changes are sometimes present. The thorax has its respiratory capacity much diminished and the viscera undergo alterations in their positions. The pelvis is more or less altered in shape according to the severity of the case and the lumbo-sacral angle trespasses either on the left or right of the cavity according as to whether the convexity of the curve in the lumbar region be to the one side or the other.

Any disease, constitutional or otherwise, which produces general debility and loss of stamina, gives rise to more or less difficulty in maintaining the erect position and the result is an increase in the normal antero-posterior convexity of the spine in the dorsal region—a condition which is known as kyphosis or stooping. This general want of muscular strength if associated with some determining factor causes a lateral deviation of the spine to occur, which when persistent and if more than to a limited degree, and accompanied as it is with a weakening of the spinal ligaments, must of necessity give rise to rotation of the bodies of the vertebræ. Where there is a general falling off in muscular power it is the spinal muscles that suffer more than any other part, as they have to maintain the body in the erect position. "Determining factors" may be instanced by the standing on one leg, writing in wrong attitudes, and various positions which have to be adopted when following certain occupations. The spinal muscles are prominent on the convex side of the curve and flattened on the side of the concavity. This is due to the transverse processes on the convex side being more prominent owing to the rotation of the bodies to that side, which of necessity causes the transverse processes to come backwards, and to the transverse processes on the concave side being less prominent owing to their being rotated forwards, added to which is the fact that the muscles on the concave side are weakened.

A curvature having taken place in one part of the spine, sooner or later a compensating curve will occur in another part. It is always an important point, as far as treatment is concerned, to decide which curve is primary and which secondary. The most common deformity met with is a curve in the dorsal region with the convexity to the right and a curve in the lumbar region with the convexity to the left. In many cases the dorsal is the primary and the lumbar the compensating or secondary curve, whilst in other cases the lumbar curve is primary and the dorsal secondary. For instance, if the determining factor be the excessive use of the right arm then the dorsal curvature would be primary and the lumbar secondary, whereas on the other hand if the determining factor be due to the fact that one leg is shorter than the other the lumbar curve will be primary and the dorsal curve secondary. In many cases it is very difficult to determine which of two curves is primary, nevertheless no trouble should be spared in endeavouring to form a correct diagnosis on the point. The importance of it lies in the fact that in treating the case it is the secondary curve that first disappears, although at the same time a reduction in the primary curve is taking place and it is the primary curve that is straightened last. We have first, therefore, to direct our main attention to the reduction of the secondary curve and when this has been rectified we can bring our energies to bear on the straightening of what remains of the primary curve. The cause of the deformity will in a large number of cases enable us to decide at once which is the primary curve. The primary curve is generally greater than the secondary, although sometimes the secondary curve is the greater of the two, in which case a third curve will often be found which is really compensatory to the second curve, and in the treatment of such a case the third curve must receive the greatest attention at first, then the second curve, and, finally, what then remains of the primary curve. A third curve may, of course, occur, and often does, without the secondary curve becoming greater than the primary curve, but nevertheless it is compensating to the secondary curve. The primary curve may be in the cervical, dorsal, or lumbar region; most usually it is in the dorsal region, but primary lumbar curves frequently occur, being caused by one leg being shorter than the other or a tilting of the pelvis to one side. It is to be noticed that a shortening of one leg does not necessarily, although it does usually, result in a lumbar curve with the convexity on the side of the shorter leg, as [illegible] onvexity of the [illegible] f the shortened [illegible] the fact remains. A compensating curve is naturally always on the opposite side to the curve which it compensates. A dorsal curve is not always compensated by a lumbar curve but sometimes by a curve lower down in the dorsal or else in the dorso-lumbar region.

Wimpole-street, W.

A Mirror

OF

HOSPITAL PRACTICE,

BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias, collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv., Proœmium.

ST. MARY'S HOSPITAL.

TWO CASES OF RICHTER'S HERNIA WITH PERFORATION AND PERITONITIS.

(Under the care of Mr. V. W. LOW.)

CASE 1.—A woman, aged 30 years, was admitted to St. Mary's Hospital on Feb. 3rd, 1904. In September, 1903, she had a doughy swelling in the right groin accompanied by pain; no impulse could be felt and there was neither vomiting nor constipation. The case was regarded as being one of inflammation of a crural gland and cleared up under local treatment. On Jan. 30th, 1904, the lump again appeared, accompanied by pain, and there was in addition some redness in Scarpa's triangle; no impulse could be felt on the patient coughing. The bowels did not act on this day. On the 31st there was some vomiting and the pain was worse; the bowels acted slightly. On Feb. 1st the vomiting ceased but the bowels did not act. On the 2nd the vomiting recurred in the evening and there was considerable pain in the region of the umbilicus. On the 3rd the pain became intense and the vomited matter was dark in colour and of a foul odour. There had been now no action of the bowels for three days in spite of repeated enemata and Dr. S. G. Felce, to whom Mr. Low is indebted for the history, sent her at once to St. Mary's Hospital.

On admission the woman appeared to be ill but was not collapsed. Her temperature was normal, her pulse was 96, and her respirations were 18. There was a soft, tender, non-expansile and irreducible swelling in the right groin in the position of a femoral hernia. The skin over the swelling was œdematous and red. The abdomen was slightly distended but the abdominal walls moved on respiration. There were no rigidity and only the slightest degree of tenderness.

At the ope[illegible] half an hour of her a[illegible] opening the sac of the hernia it was found to contain a quantity of foul pus and feculent material but no bowel. The abdomen was then opened in the middle line below the umbilicus and a condition of advanced general purulent peritonitis was discovered, the peritoneal cavity containing fluid fæces. Near the internal opening of the femoral canal was a coil of intestine about two inches above the ileo-cæcal junction, two-thirds of the lumen of which had been nipped by the opening of the femoral ring to form a Richter's hernia. The herniated portion was gangrenous and had perforated in two places. About four inches of intestine were excised, including the gangrenous patch, and two Paul's tubes were tied into the patent ends of the intestine. The abdominal cavity was thoroughly irrigated with hot saline solution and a glass drainage-tube was inserted into the pelvis. The patient appeared at first better after the operation but gradually sank and died 20 hours afterwards.

CASE 2.—A woman, aged 41 years, was admitted to St. Mary's Hospital on March 5th, 1904. She was in her usual health till Feb. 25th. She had previously suffered from pain in the right groin for two years and this pain had been accentuated during her last pregnancy, which terminated in August, 1903. No local swelling had ever been seen before the onset of the present illness. On the 25th the patient noticed a sudden pain in the right groin and she vomited. At the same time a swelling appeared in the groin. The pain was sharp and continuous and any food she took was immediately vomited. The pain continued and she was unable to do her work, though she still remained up and got about the house. The bowels were confined from the beginning of the attack. [illegible] passed. Enemata were [illegible] 28th she took to her bed, [illegible] severe and the pain intolerable. Her condition became steadily worse till she was admitted to hospital on March 5th. Her bowels had not been opened for eight days and for four days she had scarcely taken any food owing to the persistent vomiting.

On admission her pulse was 120, her respirations were 28, and her temperature was 97° F. There was no marked evidence of collapse and the woman was cheerful. The abdomen was flaccid and not in the least degree tender. There was a swelling in the position of a right femoral hernia which was *irreducible to slight taxis and non-expansile*; it was, however, tender and the overlying skin was slightly œdematou[illegible]ent fluid escaped but no bowel [illegible] was then opened in the middle [illegible]ral suppurative peritonitis was [illegible] filled with a purulent fluid similar to that which had escaped from the wound in the groin. The peritoneal surface of the intestines was injected and covered with flakes of yellow lymph, adjacent coils being adherent to each other. A coil of lower ileum was found, of which roughly half the circumference had evidently been strangulated, the strangulated portion still retaining the shape in which it had occupied the hernial sac. No obvious perforation was demonstrable but the herniated portion was covered with thick yellow recent lymph. The coil in which the strangulated area was situated was laid on the abdominal wall outside the peritoneal cavity, being fixed in position by a mesenteric stitch. The peritoneal cavity was thoroughly washed out with hot saline solution and a glass drainage-tube was placed in the pelvis. The wound in the groin was left open with a large rubber drainage-tube lead[illegible]y. On the next day the general [illegible] and the temperature was nor[illegible] in the evening. The temperature rose to 100° on the 8th but otherwise was never above 99°. On the 7th the end of intestine was covered with lymph and granulations and was found to be slowly recovering its normal shape, the pouch-like projection of the herniated portion gradually disappearing. The bowels were opened three times. On the 9th, under an anæsthetic, the coil of intestine was replaced and the peritoneal cavity, which still contained some straw-coloured serum and lymph, was again washed out with hot saline solution. The wound was partially closed and a glass pelvic drainage-tube was inserted. The patient's further progress towards recovery was uninterrupted but she remained in bed until April 14th owing to the length of time required by the wound in the groin to close. She left the hospital on April 22nd in good health.

Remarks by Mr. LOW.—These two cases, occurring within a few weeks of one another, present many features of similarity, the most striking being the insidious nature of the onset. In the first one it was only on the fourth day of the illness that the case was considered sufficiently serious to require operation, while in the second the woman got about the house for the first four days of her illness and it was not till the eighth day that she was brought to hospital. Neither of the women on admission appeared collapsed nor did their facial or general aspect suggest the serious nature of their illness. In neither case was there abdominal rigidity, the abdominal walls moved on respiration, and only in the case of the first woman was there the slightest abdominal tenderness, the absence of this in the case of the second being most marked. In both cases the strangulated portion of intestine had slipped away from the hernial sac and was found in the abdominal cavity a short distance from the ring. Perforation had occurred in both cases, but in the second the perforation had evidently become closed by adhesive lymph.

The question of treatment presented many difficulties. In each case excision with immediate suture would have been the ideal method. In the first case this would have involved replacing the newly sutured bowel into the infected peritoneal cavity, while the line of juncture would have been exposed to considerable strain owing to the previous obstruction, the coils of small intestine above the hernia being filled with foul liquid fæces and only a small quantity of this could be drained away at the time of the operation. Bearing all this in mind I determined to drain the intestines for a few days by means of a Paul's tube and then, if the patient lived, to suture the intestine at a second operation. In the second case the effects of the intestinal obstruction were not so obvious when the abdomen was opened and resection with immediate suture was therefore rendered more hopeful of success. But in this case there was still the objection of replacing the newly sutured intestine into the foul peritoneal cavity and there was also the possibility that resection might not be necessary. I therefore decided to withdraw the injured coil from the peritoneal cavity and if in the course of a few days it did not recover to perform a resection outside the peritoneal cavity. This, however, was fortunately rendered unnecessary.

Reviews and Notices of Books.

Manual of Practical Ophthalmology. By GEORGE A. BERRY, F.R.C.S. Edin., Senior Ophthalmic Surgeon Royal Infirmary, and Lecturer on Ophthalmology, University of Edinburgh. With 223 Illustrations. Edinburgh and London: Young J. Pentland. Sm. 8vo, pp. 570.

IN 1893 Mr. Berry brought out a second revised and enlarged edition of his work on the diseases of the eye. The present volume is based on that treatise and contains the results of his more matured experience. In so progressive a subject as ophthalmology, which is in intimate relation with every other branch of medical knowledge, 11 years embrace a period of great advance in the pathology and in the treatment of disease generally and those advances are faithfully reflected by Mr. Berry so far as they affect the eye. Although large portions of the volume are only a repetition of the last edition, scarcely a paragraph remains without some addition or alteration. To give an example in the treatment of detachment of the retina, in the older work he remarks (p. 223) that removal of the subretinal fluid by puncture through the sclera has often been tried but without any marked success. In the new volume he says: "I have obtained the best results by repeated punctures made with a Graefe's knife pushed through from one side of the eye to the other in the region of the detachment." This proceeding, he considers, is always worth trying in young people, though it is useless in complete detachment and in old people.

Again, the results of riper knowledge are rendered evident by such sentences as the following. "The various diseases of the cornea are in all respects the most important of the common diseases of the eye. They are for the most part cases in which not a little good can be done by proper and judicious treatment and in which much harm may result from wrong interference or neglect. Their importance lies in this coupled with the value to vision of the normal cornea. There are other parts of the eye which are, of course, equally valuable in this respect, but of few of them can it be said with equal justice that the treatment is often of great importance in influencing the consequences of the diseases by which they may be affected." These remarks are succeeded by others bearing on the subject of opacities and alterations of curvature, on which the student will do well to ponder. In regard to colour blindness, which is now so important in the testing of the vision of persons in many avocations of life, Mr. Berry only mentions Holmgren's wool test, which, though good in itself so far as it goes, should, if possible, be supplemented with coloured lights at distances of 200 or 300 yards, a procedure not difficult to carry out where several hundred railway officials or sailors have to be examined and reported on. Mr. Berry has prudently omitted or considerably reduced the chapters in his earlier work dealing with the optical principles and physics of the eye (notwithstanding that the amount of mathematical knowledge required to understand them could be easily acquired by any earnest student), because the book is really a manual for the young practitioner who has not, as a rule, the time to devote to such subjects.

Mr. Berry has little to add to his former account of sympathetic ophthalmia. The pathology of that affection is still obscure. The conclusions to be drawn from clinical observation are for the most part suggestive of microbic inoculation, for the disease almost invariably follows a perforation of the sclerotic or cornea, especially in the ciliary region. The injured, or exciting, eye long remains soft and tender in the neighbourhood of the wound, conditions that are favourable to absorption or entrance of micro-organisms, of which there are many forms in the conjunctival sac, into the lymphatic and vascular systems; and, lastly, a week or two usually elapses before sympathetic inflammation is excited in the sympathising eye, as though time were an element in the transmission. On the other hand, neither experimental nor bacteriological evidence has been obtained of the presence of any particular organism in either eye. Mr. Berry, however, remarks that this does not preclude the possibility of the transmission of toxins formed by the action of germs from the exciting eye into the sympathising eye. In regard to the treatment to be followed, whilst the general rules laid down in regard to the removal of the injured eye are sound, sufficient stress has hardly been laid on the value of complete rest of the eyes in a dark chamber for several days. An attack otherwise imminent may thus sometimes be warded off.

In speaking of the operations for the extraction of cataract Mr. Berry seems to prefer the combined method, that is, the method in which an iridectomy is performed, but he also approves in favourable cases of simple extraction. He insists, however, on making a large conjunctival flap, to which the objection may be raised that considerable hæmorrhage sometimes occurs which entering the anterior chamber, obscures the subsequent steps of the operation. We read with some surprise the statement made by Mr Berry that his own experience of Mules's operation has not been particularly encouraging. In a great many cases, he says, the glass ball seems to be expelled sooner or later by ulceration of the overlying tissues. Such results were *probably due to the introduction of too large a ball* in the anxiety to obtain a good and prominent bed or possibly in the too early insertion of the shell or artificial eye. Some weeks should be allowed to elapse before this is worn and then it should be worn only for a few hours at a time. Mr Berry seems to have been fortunate in his experience of Bowman's method of slitting up the canaliculus in cases of watery eye, as he states that "all that is necessary as a rule to cure the watery condition of the eye is to convert the canaliculus into an open rill." That this proceeding is sometimes successful is certain but the student should be warned that it is unwise to promise a cure, whilst it *may* happen that the patient is worse off after than before the operation. Large probes may sometimes be passed through the nasal duct with no consequent relief to the "watery eye." Slight cases are better left alone.

We commend the book to the student and the practitioner as one on which reliance can be placed and which may be consulted with advantage in any of the emergencies of ophthalmic practice.

By WILLIAM P SPRATLING
ndent of the Craig Colony for
With 16 Illustrations in the text
Philadelphia and New York
1904 Pp 522 Price 18s net

THE great progress made in the knowledge of epilepsy and its treatment during the past decade and a half and the fact that no complete treatise on the subject has appeared in the United States during the past 30 years were the chief reasons that led to the preparation of this volume by Dr Spratling. It includes definition and classification of the subject together with etiology diagnosis, prognosis, pathology psychological and medico legal aspects, and treatment. The author's work is the result of his experience as medical superintendent of the Craig Colony for Epileptics during a period of ten years.

In classification four types of epilepsy are recognised by the author—viz *grand mal petit mal* Jacksonian epilepsy, and psychic epilepsy. Etiologically epilepsy is regarded as a morbid or degenerative nervous affection dependent *on a similar condition in the parent* more frequently than on any other single cause while the author's statistics bear out the view that 80 per cent or more of all cases of epilepsy begin before the twentieth year. Methods of physical examination of patients are given in the early chapters. From a critical survey of the statistics of Great Britain France Belgium and the United States the incidence of epilepsy upon the general population is shown to be high but not nearly so high as that of insanity. One epileptic to 500 inhabitants is the estimate for the United States. The circumstances of age, sex, race, and occupation in their relation to epilepsy are dealt with in some detail. Heredity is made the subject of a specially interesting chapter which also sums up the other etiological factors.

The more strictly clinical part of the work occupies Chapters VI to X. The subjects dealt with are the different types of epileptic seizures, including rare forms such as psychic epilepsy and hystero epilepsy the status epilepticus, forms of epileptic aura, the casualties and sequelæ of fits, the post-epileptic state, and the diagnosis of epilepsy. The various clinical and diagnostic features are detailed with care and clearness. Much statistical knowledge is presented from the collected records of Craig Colony as to the frequency and character of many of the clinical phenomena. A chapter on Prognosis concludes the early half of the volume. The average age of onset of epilepsy, concludes Dr Spratling, is between ten and 20 *years and the majority of those who die through its effects* do so before middle age is reached.

The second half of the book is devoted to the pathology of epilepsy, to general treatment, including life in a farm colony and to medical treatment by drugs and other therapeutic measures. "In a disease in which [like epilepsy] etiology and pathology are obscure," says Dr Spratling "treatment must be more or less empirical." This applies even to the use of bromides. An account is also given of the recent work done in the serum treatment of epilepsy. The question of trephining in cases of epilepsy with focal indications of brain lesion is carefully discussed and the conclusion is drawn that the majority of those operated on experience no benefit, while about a fourth are somewhat benefited. Under antiseptic precautions little danger is to be feared from the operation itself. A fairly full account of the psychological and medico legal aspects of epilepsy concludes the second portion of the work.

Dr Spratling's work is written throughout in a clear and readable style. The plates and illustrations are useful and excellent the former would be hard to surpass. While not aiming at monographic completeness the work is a mine of information on the whole subject of epilepsy and its treatment and should be in the hands of every alienist and physician who has the care of epileptics in farm colonies and similar institutions.

A Compendium of Chemistry including General Inorganic and Organic Chemistry. By Dr CARL ARNOLD. Authorised translation from the eleventh enlarged and revised German edition by JOHN A MANDEL Sc D. New York John Wiley and Sons. London Chapman and Hall 1904. Pp 627. Price 15s.

THIS work has had a large circulation in Germany amongst students and professional chemists and its popularity there has induced Dr Mandel to undertake its translation into the English language. Dr Carl Arnold, the author is professor of chemistry in the Royal Veterinary School of Hanover and his success as a teacher is due to his faculty of clearly expounding both principles and facts. It is no small achievement to be able to deal with the whole of the principles and facts of chemistry in a comparatively small volume such as is the one before us. Yet this compendium a word by which the translator has rendered the word "Repetitorium" of the German text, comprises general inorganic and organic chemistry. Nor have modern advances escaped the author's attention. The work is divided into three parts and the first part on general chemistry is we venture to think the best example of the author's power as an exponent. The sections in this part on theory and on recent developments in physical chemistry are excellently clear. As an example may be quoted his explanation of the action of ions. "*The more completely an* electrolyte is associated" writes Dr Arnold, "the greater is its conductivity and its chemical activity since it is the free ions only which react. For example hydrogen chloride when dissolved in chloroform does not act on carbonates since in this case no dissociation of HCl is possible." The importance of the ion theory in physiological chemistry is also pointed out. As an example is quoted the poisonous action of certain metallic salts which is proportional to their dissociation and therefore alcoholic solutions of mercuric chloride or silver nitrate in which the salts are less dissociated than in their aqueous solutions are not fatal to anthrax bacilli. There can be little doubt that the theory of ions will have a very marked bearing on many points in medicine and we are therefore glad to find that this remarkable development of chemical theory is adequately treated. We pass over the second part of the work which deals with the chemistry of the inorganic elements. It may be said, however, that the author classes radium under the uranium compounds. Part III. deals with organic chemistry and here the author is just as clear as he is concise in the treatment of such subjects as constitution, substitution, stereoisomerism, and so on. Still, he finds space to deal with the terpine group, bitter principles, protenes, albuminoids, enzymes, and alkaloids. In short, the book is an excellent example of what a chemical text-book should be.

Le Soignage Médical et les Infirmières (Nursing and Nurses). By Dr. MARC BLATIN. Paris: J. B. Baillière et Fils. 1905. Pp. 276.

THIS little work, which is from the pen of a French physician of considerable experience in both hospital and private practice, is in effect a plea for general reform in all branches of nursing in France. The author reviews and contrasts the systems of training which obtain in his own country and in England, and it must be admitted that the conclusions at which he arrives are distinctly flattering to our own systems and to the *personnel* of the nursing staffs of our hospitals and public institutions. There are two factors which the author holds mainly responsible for the contrasts—so unfavourable to his own country—which can be drawn between the two national systems The first and most important of these is that while in France the nursing profession is recruited from an ignorant and humble class, in England the solid advantages of the occupation attract women who by birth and education are upon a higher social level. Although the author recognises that reforms are inevitable he believes that the change will only be effected slowly, for the reason that most of the large French hospitals are under central and Government control. Although perhaps all authorities will not agree with Dr. Blatin that centralisation of hospital administration is a barrier to progress, it must, indeed, be admitted that the *personnel* of the nursing staffs and the general standard of nursing are also very inferior in Poor-law municipal institutions in England as compared with those which are under the management of independent boards. Dr. Blatin insists that before most of the reforms which he suggests can be carried out in practice it will be necessary to educate the public to take an entirely different view of the status of the nurse. At the present moment she is regarded and treated simply as a domestic. It occurs to us that this view rather puts the cart before the horse. When the French nurse ceases to be a domestic in education and instincts she will assuredly receive the consideration to which her social status and improved education entitle her. We are certainly in greater agreement with the desirability of another step which Dr. Blatin considers necessary to obtain his object and that is that the comfort of nurses should be more closely considered in those institutions in which they receive their training. Among the many useful suggestions which Dr. Blatin makes for the satisfactory training of nurses, and especially of those who intend subsequently to engage in private nursing, is one that they should attend courses and lectures on invalid cookery; he says that such are provided in most of the English hospitals. We only wish that this were the case. Although this little book will have no particular interest for English readers we can quite imagine that its plea for reform will have an excellent effect in stimulating the somewhat slow-moving authorities of French hospitals to a sense of their responsibilities as far as the nursing of patients is concerned and to a sense of the possibilities which are open to them in the way of more systematic training of their staff and probationer nurses.

LIBRARY TABLE.

A Laboratory Manual of Organic Chemistry for Beginners. By Dr. A. F. HOLLEMAN. Translated from the Dutch by A. JAMIESON WALKER, Ph.D., B.A. New York: John Wiley and Sons; London: Chapman and Hall. 1904. Pp. 78. Price $1.—This laboratory manual is an appendix to the author's text-book of organic chemistry which was reviewed in THE LANCET of Nov. 21st, 1903. Its object may therefore be taken to be to give the student help when the opportunity arises for handling the compounds concerning which he is being instructed. The plan of the book is progressive. In the opening chapters the qualitative analysis of carbon compounds is described. Here simple methods for the detection of carbon hydrogen, nitrogen, sulphur, and the halogens are given. Next are described such laboratory methods as fractional distillation, determination of melting point and boiling point, extraction with solvents, and so on. The remainder of the book is devoted to the detection of organic compounds, including sections on the tests for alkaloids and the examination of albumins. The book affords an admirable laboratory companion to the author's text-book already referred to and an intelligent use of both would give the student a very excellent groundwork in organic chemistry.

Nature Teaching based upon the General Principles of Agriculture for the Use of Schools. By FRANCIS WATTS, B.Sc., F.I.C., and WILLIAM G. FREEMAN, B.Sc., A.R.C.S., F.L.S. London: John Murray. 1904. Pp. 193. Price 3*s.* 6*d.*—This little book was originally written for use in the West Indies with the intention of arranging the courses of study both in secondary and in primary schools, being employed as a text-book in the former, while in primary schools it is used by the teachers in preparing and formulating their teaching. As it was found so useful in the West Indies Mr. Watts (who is the Government analytical and agricultural chemist, Leeward Islands) has, with the assistance of Mr. Freeman, issued the present edition which has been written to meet the circumstances of British conditions. Elementary nature teaching admits a wide range of subjects and individuality plays an important part, but if good work is to be done it must be impressed on the teacher that the pupils must do things for themselves. For this reason but few illustrations are used in the book lest the pupils, seeing how things appear in the illustrations, may be tempted to shirk the effort of seeing the natural objects for themselves. In the appendix suitable courses of work are indicated according to the time of year at which the work is begun. In connexion with school gardening it is recommended that the elements of a simple drill should be introduced into the outdoor work and that in the working plots themselves the work should be carried out in a similar manner to that of a laboratory. The authors lay stress on the instruction that in all work drawing, measuring, and weighing should be insisted on. The book is divided into nine chapters which treat successively of the seed, the root, the stem, the leaf, the soil, of plant food and manures, of flowers and fruits, of weeds, and of the animal pests of plants. The chapter on Plant Food and Manures is excellently arranged and most instructive and the one on Animal Pests of Plants is very practical. When speaking of the remedies against damage to crops by injurious insects the authors write that "full directions concerning the use of many of these [insecticides] are to be found in the excellent leaflets of the Board of

Agriculture." Perhaps the information contained in these leaflets might with advantage have been included in this volume. The book is very simple and very practical and may be of great use if adopted in schools in this country.

Radium and other Radio-active Elements. By LEONARD A. LEVY and HERBERT G. WILLIS. London: Percival Marshall and Co. 1904. Pp. 105. Price 2*s.* 6*d.*—This little work is described as a popular account of radium and other radio-active elements treated experimentally and the authors have evidently taken pains to collect the latest information upon the subject. Setting out with an excellent object in view they have succeeded in putting together some valuable material, though occasionally their descriptions are wanting in clearness and a want of order is noticeable in the presentation of the facts. No apology need have been offered, we think, for the statement that the various theories of the sources of the radiation have received no attempt at explanation. A completely satisfactory explanation is not yet forthcoming even from the great masters. The merit of this little book, however, is its experimental character, although, unfortunately, the price of radium salts is calculated to deter many experimentalists. The authors have allowed themselves here and there to lapse into loose statements of which the following is an example: "The last decade has witnessed discoveries which have rendered possible the photography of the bones of a living being." The achievements of the x rays are wonderful but after all they merely effect the photography of shadows. If a telegraph pole were interposed between the sun and the sensitised screen the record would be the shadow of the pole and not a photograph of the pole itself. A photograph of the bones of a living being, as, for instance, of the skeleton, is a different thing from the impressions given on the sensitised plate by the shadows of the bones cast by the x rays.

A Guide to Medical Officers on Field Service, more especially Civilian Medical Officers and Junior Officers of the Royal Army Medical Corps. By Major J. S. EDYE, R.A.M.C. (Gale and Polden's Military Series.) Aldershot: Gale and Polden, Limited. 1904. Pp. 35. Price 1*s.* net.—The nature and object of this little publication are correctly and sufficiently set forth in its title. It embodies a great deal of information in a highly compressed form on all those official details and matters which come before a medical officer in the course of his duties and with which he has to be more or less acquainted in order to deal with them promptly and successfully when on field service. In glancing over its pages the reader will be surprised at the number and variety of duties of a quasi-military character which fall to the lot of an army medical officer to undertake or to know something about. On all these points this little book, it seems to us, supplies quite the sort of information that is required and in the most concise and accessible form practicable.

£300 per annum from 30 Acres; or, a Modern Bee Farm and its Economic Management. By S. SIMMINS. London: Woodford, Fawcett, and Co. 1904. Pp. xii.-405. Price 5*s.*—In placing this work before the reader Mr. Simmins says that it is his intention to adhere strictly to the science of practical bee-keeping. With few exceptions the instructions contained in the book are confined to the author's own experience which has extended over 30 years of close observation. He places the management of bees before the novice and those who wish to become bee-keepers in as clear and straightforward a manner as possible; simple matters are therefore gone into at length that the learner may profit by the author's own early experiences. At the same time he expresses a hope that the expert will find some things in the volume not known before to the bee-world. While there is no fortune to be made by bee-keeping it is a light and pleasant occupation and all may gain health and pleasure in following the study of one of the most remarkable creatures in the insect world. "The man who finds himself adapted to the undertaking may safely invest his money and be assured of obtaining better returns than very many other occupations offer at the present day." The author endeavours to show how a minimum profit of £300 per annum may be secured from 30 acres of grassland by making the most of everything that can be worked upon it, so that one branch of agriculture may help another. If the season is unfavourable for one item it is often even more suitable for some other of the several occupations carried out upon the farm of moderate dimensions. Work in some established apiary for two years is recommended to the would-be bee-keeper. Mr. Simmins's manual is well written, thoroughly practical, and a real guide to his subject. The work is fully illustrated.

JOURNALS AND MAGAZINES.

The Practitioner.—An excellent article by Dr. F. W. Mott opens the number of this magazine for the present month (September). Dr. Mott writes upon tremors, giving a clear classification and some capital graphic reproductions of tremor due to various organic diseases and to poisoning. Another article dealing with nervous disorder is supplied by Dr. W. L. Ascherson who discusses the distinctions between hysteria and neurasthenia and their association with other diseases. He gives cases illustrative of his reasoning and his article can be read with pleasure. Mr. P. J. Freyer continues his contribution on enucleation of the prostate, the illustrative plates being particularly good. The journal includes also contributions from Dr. S. Vere Pearson on Tuberculosis in Early Childhood, from Mr. J. Jackson Clarke on Paralytic Deformities, and from Dr. J. Blumfeld on Anæsthetics.

The Quarterly Journal of Microscopical Science. Edited by E. RAY LANKESTER, F.R.S., with the coöperation of ADAM SEDGWICK, F.R.S.; W. F. R. WELDON, F.R.S.; and SYDNEY J. HICKSON, F.R.S. With lithographic plates and engravings on wood. London: J. and A. Churchill. Vol. XLVIII. Part II., September, 1904. Price 10*s.*—This number contains: 1. A long and important memoir by Professor Lankester on the Structure and Classification of the Arachnida, which is a reprint of his essay on this subject published in the tenth edition of the "Encyclopædia Britannica." It is illustrated by many woodcuts. 2. Some New Species of the Genus Phreodrilus, by W. Blaxland Benham, D.Sc. This genus is one of the oligochætous worms. Three species of phreodrilus are here described, which the author names Phreodrilus lacustris, Beddardi, and Mauiensis. They were all obtained from the lakes of New Zealand. The article is accompanied by three plates which give the details of the anatomy of these worms. 3. A New Species of the Genus Haplotaxis with some remarks on the Genital Ducts in the Oligochæta, by W. Blaxland Benham, D.Sc., with three plates. 4. The Œstrous Cycle in the Common Ferret, by Francis H. A. Marshall, D.Sc., with three plates. Dr. Marshall finds that the female ferret is monœstrous but many have one, two, or three sexual seasons within a year; the "heat" periods are usually restricted to the spring and summer months, the autumn and winter being occupied by a prolonged anœstrum. 5. Two New Forms of Choniostomatidæ, which are Copepoda parasitic on Crustacea, Malacostraca, and Ostracoda, by H. J. Hansen, D.Sc., of Copenhagen, with a plate.

THE SEWERAGE OF BOVEY TRACEY (DEVON).—At Bovey Tracey, on Sept. 14th, Colonel A. Durnford, on behalf of the Local Government Board, held an inquiry into the application of the Newton Abbot rural district council to borrow £7000 for sewerage and sewage disposal for Bovey Tracey.

THE LANCET.

LONDON: SATURDAY, SEPTEMBER 24, 1904.

Motor Vehicles and the Public Roads.

LETTERS to our contemporary the *Times* are justly regarded as indications of current opinion on the part of the British public. The text of many of these letters just now is the dangers and nuisances caused by motor-cars. We are not concerned with these actual letters, though it is impossible to avoid the conclusion that the manner in which the case has been stated against the motor-cars is more dignified, sympathetic, and considerate than the manner of the other side. The question is one full of minute difficulties and demands careful and judicial consideration on the part of the medical profession for there is no section of the community which is more concerned in the safety and ease of travel by road. Moreover, there is no class of men who will, within the near future, probably use motor-cars in their daily work to the same extent. We should not therefore allow our minds to be prejudiced unduly by the inconveniences and the dangers of the present. But nevertheless there is no class of educated men so well able to realise that the stern indictment drawn against motor-car drivers by Dr. SOPHIA JEX-BLAKE and others carries a true bill. To have driven with a medical man in country practice in parts of the home counties this summer is to have learned in a few days that the present use of the roads by motorists is dangerous and selfish. There are no better judges of such a question than country practitioners; they live on the roads, they drive seasoned horses not given to "nerves," they are from sheer practice good whips, and they are men whose daily life and work teach them consideration for others. There is no question that the allegations made against motor-cars have grave foundations. The properly trained driver or owner, particularly one who has had previous experience of the roads in charge of horses, gives no ground for offence, but the half-trained amateur and the reckless professional chauffeur do things which astonish and appal those who meet them. We have been shown by-lanes so narrow that in many parts two vehicles cannot pass and so winding that 200 yards are rarely visible ahead along which a racing Napier has been run for a dozen miles at a speed which distressed its occupants; we have seen a hill so steep that no local driver would permit his horse to trot down it but down which a four-cylinder Panhard car was launched at such a speed that two tyres burst at the bottom in attempting to round a corner and a disaster as appalling as that which recently occurred near Wicklow was averted only by mere chance. The excuse offered is that the driver did not know that the hill was so steep and that there was a corner at the bottom. The navigator of a valuable steam launch does not force it up a backwater of the Thames in ignorance of what may be in front but owners of costly cars, having neither maps nor knowledge of the country, rush them through narrow hilly lanes and run them at 15 miles an hour through small towns and villages along the narrowest roads, ignorant of the gradients and careless of the corners. We noticed the other day the track of a big car which we had just met and which had run through a tortuous line of streets and roads in a small town, taking almost every corner on the wrong side.

It is no exaggeration to say that the amenities of road travel in the home counties are being totally destroyed. There is no pleasure in riding a hack when the fate which recently nearly overtook Sir EDWARD BRADFORD (a fine horseman, we believe) may be coming on us at every corner. No girl home from school can ride her pony on Saturdays in Kent or Surrey now, for most motorists do not even know the proper side on which to pass a led horse. Few drivers of cars seem to be aware that it is not good manners to rush past another vehicle at top speed and that to change gear in the clumsy way in which so many drivers do change gear alongside a carriage is as offensive as it would be to shout at or to lash the horses of a passing vehicle. The slaughter of dogs in village streets is most callous and discreditable; our readers in small country towns and villages, since they dwell usually in the main street, need no reminders. They will appreciate also that all their front windows must be shut on Saturdays and Sundays because of the dust, that the hooter and the grinding change of gearing make Sunday afternoons hideous, while to step off the curb in front of the house without a glance each way along the street is as safe as to cross the metals at Finsbury Park. The accidents to life and limb, the widespread dangers to children, bicyclists, and old and infirm people, are all due to lack of consideration. There is no excuse for it for the average motorist is a man of leisure when on his car; moreover, the modern car is capable of great "flexibility" of speed and its pace can be reduced by a touch, but many drivers will neither lower their gear nor shut their throttles: they run ahead and blare upon their hooters. The two worst offences on the road are the maintenance of high speed in the centre of the track until close to an approaching horse and keeping the wrong side at corners. Horses may be trained to motor-cars for years but to run a large powerful car straight at another vehicle at a speed of over ten miles an hour in a narrow road and to deflect it at the last minute is more than most horses care about; a horse knows nothing about the subtleties of steering gear and sometimes even the steadiest will turn. To run corners on the wrong side at any speed is no less than a crime, since it is rarely possible in the narrow hedge-bordered roads of England to see sufficiently ahead to avert the serious accidents to children and animals which occur every week. We write in full knowledge of the value of modern steering gear and of the control afforded by clutches and clutch-coupled brakes but we are unpleasantly cognisant also of the laws of momentum and the working experiments instituted by the Automobile Club in the sudden arrest of heavy cars running at high speeds. The vast majority of these "accidents" are preventable and should be prevented. A better sense of responsibility in driving motor cars than has hitherto existed should be established. The legislation of last year is a complete failure. To follow the cases reported in the police courts is to realise that the punishment for offences is in no way deterrent, that too much stress is laid on the actual pace of locomotion and too little on the exigencies of the roads in use, while no attempt has been made by local authorities to enforce the provisions of the Act of 1903 which empowers county councils to limit speed within any areas or "places" which they may select, subject to the ratification by the Local Government Board of their restrictions.

We write not only on behalf of the general public who have to use the roads but also in the interests of motor cars; medical men use them largely now and will use them more largely after the extremely satisfactory trials of small cars[1] which the profession has been recently watching with much interest. If the conduct of motorists is such as to create a deep feeling against them which will be reflected in the actions of the county councils, limitations on the use of by-roads may be imposed which will be irksome to motorists in general, but which will be peculiarly prejudicial to the use of horseless vehicles by the class of professional men who need them most and who will unquestionably be valuable customers to the automobile industry in the near future. There are a large number of excellent journals devoted to motor cars but it is to be regretted that they do not seem to employ the influence which undoubtedly they possess to train the neophytes of motoring in the important items of careful and considerate driving. One well known manual, which has reached a third edition, has a full page illustration of "how to take a corner"—namely, on the wrong side of the road. It is true that the letterpress contains instructions stating when the illustration should not apply but the picture is far more obvious than the letterpress and has doubtless had regrettable results. One of the best periodicals contained in the spring of 1903 instructions, with diagrams, for getting the shortest line of travel on a winding road which involves for the better maintenance of equilibrium round curves the cutting of corners on the wrong side of the road. Both tutors and pupils think but of the speed and learn only the lesson of safety at the expense of disaster. All this must be changed and then the motor car will take its place as an unobjectionable as well as a most useful, means of locomotion.

The Practical Teaching of Gynæcology.

THE great strides which the art and science of gynæcology have made in the last few years have much increased its importance as one of the subjects of the medical curriculum. The standard of knowledge required of the student is now much higher than it was and the examinations are correspondingly more difficult. *Pari passu* with the development of the subject the teaching no doubt has improved but there is still much to be done in this direction. It may well be said that the two subjects of the medical curriculum which are most inadequately taught from the practical point of view at the present time are midwifery and gynæcology. Nor is the reason for this far to seek. It lies in the difficulties which surround the practical teaching of these two subjects—difficulties which in this country at any rate very little attempt has been made to overcome. There is perhaps no subject in the whole range of the student's career in which clinical teaching is of such importance, while the difficulties surrounding the proper carrying out of such teaching and the adequate examination of cases of pelvic disease are very considerable indeed. If the student requires constant practice to enable him to examine a case of heart or lung disease properly and systematically, how much more does he require such practice in the bimanual examination of the female pelvic organs? Yet from the very nature of the class of case it is often impossible for a student, no matter how energetic he may be or how keenly he may seize the opportunities afforded him, to become really expert in such examinations. The number that can examine any one case is strictly limited and the opportunities are correspondingly few. In our experience men are often loth to examine the patients and require constant urging to make them seize all the opportunities that are afforded them, nor is this frame of mind to be wondered at. Many of the gynæcological out-patient departments in our large general hospitals are flooded with a number of cases of no value from the teaching point of view and the time of the out patient physician is only too often taken up with such cases with the result that his opportunity for teaching is markedly curtailed.

It is a disheartening fact that there is no provision for any student who wishes to make a specialty of gynæcology to pursue his studies in London. It is true that if he has the time he can sometimes obtain a clinical assistantship at one of the special hospitals, but even there he is left more or less to his own devices, while of proper post-graduate teaching with an opportunity of carrying out a large number of pelvic examinations there is no provision at all. Constantly have we had to advise a student wishing to obtain a special course of instruction in gynæcology to go abroad to one of the foreign clinics. This is a condition of things which should not exist in the largest city in the world. It is the more to be deplored because the student sometimes in these circumstances must enter on his professional career without a sufficient amount of practical training to enable him to say with certainty whether the pelvic organs in any patient are normal or not. It must be confessed that the difficulties in the way of ensuring that every student shall be as competent to examine the pelvic organs as he is to examine the chest are very great. That they are not insuperable in the case of a small number of candidates for an examination is shown by the fact that at the last London M.D. examination in obstetric medicine arrangements were actually made by which a practical examination in gynæcology was conducted satisfactorily.

It will only be when the various examining bodies make a move in this direction that we shall see any marked improvement. With the increased tendency to treat so many of the diseases of women by operation the importance of accurate diagnosis becomes greater and greater. The representatives of provincial schools, have also expressed their intention to join the party. It is expected that altogether our visitors from France will number from 130 to 150 and we are certain that the English medical profession, especially those resident in London, will exert themselves to the utmost to render this visit useful, pleasurable, and successful in every way. Our guests will be entertained at dinner on Oct. 12th at the Hôtel Cecil and we have no doubt that a large number of English medical men will desire to be present to welcome and to honour them. Any further information can be obtained from Dr. Dawson Williams, 2, Agar-street, Strand, W.C., or Dr. W. Jobson Horne, 27, New Cavendish-street, W., the secretaries of the English Executive Committee.

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[1] An account of these trials was given in THE LANCET of Sept. 10th, p. 799 and they are referred to also in another column of our present number.

"CELSUS REDIVIVUS."

ONE of our Italian correspondents writes: "Ciceronian in style, Hippocratean in method, the master work of Celsus once more appeals to his compatriots in the carefully constituted text and faithful rendering of Dr. Angiolo Del Lungo. Hitherto the 'Roman Hippocrates' has fared but indifferently at the hands of Italian translators. The Abbé Francesco Ranieri Chiari of Pisa, whose version saw the light at Venice in 1747, had slender qualifications for the work and seems, indeed, to have set himself the task of furnishing posterity with an object lesson in eighteenth century scholarship and style, the former characteristically loose, the latter characteristically affected. 90 years elapsed before another attempt in the same field was undertaken, this time with superior equipment in learning and literature, its author being Giuseppe Del Chiappa, a Tuscan by birth, and, like Chiari, an ecclesiastic by profession. Having qualified in medicine at the University of Pavia, in which he rose to be clinical lecturer, Del Chiappa acquitted himself of his task with some credit though leaving not a little to be desired in ease and elegance. His translation held the field for a quarter of a century till it was superseded by that of Salvatore di Renzi of Naples, whose monumental edition of Celsus is only less honourable to Italian medicine than his work on the 'Scuola Salernitana,' a mine of information on one of the most interesting episodes in medical history. Northern and Southern Italy having each tried its hand on reproducing the Roman classic it remained for Central Italy to bear away the palm in all the requisites of such an undertaking, and now we have in Del Lungo's text and translation as near an approach to the form and the charm of the original as life-long study and congenial gifts could make it. A Tuscan practitioner of many years' standing whose recreation after a laborious season was medical literature from Hippocrates downwards, Del Lungo left no resource untried for the elucidation and reproduction of his favourite author, the only part of his work which he was unable to perform being the revising of it in proof. This has been executed with adequate skill and pious care by his son Isidoro Del Lungo, who has had the competent aid of Professor Pietro Stromboli in a line-by-line comparison of the translation with the text and of Professor Enrico Rostagno of the Laurentian Library in a fresh collation of the Celsian manuscripts contained in that literary treasure-house. The result is before us in a compact and clearly printed octavo from the publishing firm of G. C. Sansoni of Florence, and its portability seems specially designed to render it—what it was to the translator—a companion equally pleasant and profitable on a professional man's holiday. A preliminary essay on 'Celsus and Roman Medicine' forms an illuminating introduction to the treatise itself, and from the finely moulded periods in the choicest Italian the reader is prepared for his encounter with an author possessed, *si quis alius*, of what the late Professor William Stokes of Dublin used to require in every votary of the healing art—the 'mens medica.' Here we are reminded of the substantial contributions made to therapeutic resource by the 'Roman Hippocrates,' who, according to Morgagni, was the first to recommend 'clisteri enutrienti' and whose suggestions for the relief of ascites have in Germany by Brunninghausen and in Italy by Pietro Betti been practised with the success that rewarded their originator. Here we find the history of 'anaplastic surgery,' how Celsus, who first makes mention of it, inspired the Sicilian operators, Branca, father and son, to revive it at the close of the fifteenth century till subsequent practice brought it to perfection through the Calabrian Vianeo to the great Bolognese surgeon, Tagliacozzi, called by his pupil Giambatista Cortesi, 'il legislatore ed il perfezionatore dell' arte plastica chirurgica.' And so through numerous resuscitations of 'wisdom old but new,' Del Lungo conducts us to the *quæstio vexata* of whether Celsus was a practitioner or consultant by profession, or merely the patrician amateur who acquired and practised the healing art much as the elder Cato did, in tending the slaves or *personnel* attached to his estate. Del Lungo's verdict is unreservedly for the former hypothesis, that Celsus was really a professional man, an illustrious member of the calling which the great Cæsar was the first to admit to the rights of Roman citizenship. But enough has been said to draw the reader's attention to what has been justly called 'the event of the year in Italian medico-historian literature'—an event which owes its significance not only to the transcendent merits of the classic as introduced, edited, and translated, but also to the filial care with which the posthumous work has been made accessible to the public by Signor Isidoro Del Lungo, himself an ornament of Italian literature, as witness (*inter alia*) his great edition of the mediæval Latin poet Pontanus."

HOSPITAL ABUSE.

THE question of hospital abuse has once again been brought prominently to the fore in the lay press. This is largely due to a correspondence which has recently taken place between the house committee of the London Hospital and the East-end Medical Association. The association maintained that the hospital authorities were treating as in- and out-patients individuals who had no just claim to take advantage of a charitable institution. The house committee expressed entire sympathy with the local practitioners and while realising that the matter was a difficult one to deal with drew up certain regulations with the view of checking any abuse. The principal clauses set forth in these proposed regulations are to the effect that the addresses of all patients will be taken and the books will be open to the inspection of any local practitioner. The local practitioners will also be invited to visit the out-patient department and if they recognise any patient known as being unsuitable for hospital treatment they will be able to communicate with the secretary. It is also announced that the committee is in communication with the Charity Organisation Society; it is hoped that this society will be able to advise the hospital as to the best means for inquiring about patients, while the hospital is willing to pay £100 per annum to the society for an almoner to be stationed in the receiving rooms. Finally, it is stated that the secretary has made arrangements to visit every patient admitted to the hospital on the day after arrival and if it is found that the patient is not of the class for which the institution is intended he or she is to be discharged and asked to give a donation for the time during which the patient remains in the hospital. The question of hospital abuse bristles with difficulties. Without expressing any definite opinion as to whether or not the proposals made by the house committee of the London Hospital are likely to aid in the solution of the trouble we feel quite certain that they were framed with every good intention and with a sincere desire to prevent injury being done to the practitioners of the neighbourhood Closely connected with the subject of hospital abuse is the proposal to admit patients into the hospitals on payment of small fees We have received from a correspondent a copy of a motion passed at the annual meeting of the governors of the Dorset County Hospital The resolution runs thus —

> [illegible] patients requiring surgical
> [illegible] or part of the cost of such
> [illegible] on the recommendation of
> [illegible] ample accommodation and
> [illegible] require assistance

Such cases will be admitted under the care of one of the honorary medical staff Such a rule would seem to safeguard any attempt to abuse the charity and to supply aid to a class of patient who is really in need of it There are many individuals who cannot conscientiously enter a charitable institution and yet cannot afford to pay the expenses which are entailed by a serious operation

MEDICAL FEES AT INQUESTS

AT a recent inquest at Edmonton the medical man who had attended the deceased had refused his certificate as to the cause of death on the ground that he had not attended during the two days preceding death and was summoned by the coroner as a witness In the course of his evidence he was questioned by the coroner as to his treatment of the deceased and refused to answer the questions thus put on the ground that the treatment used was the business of the medical man and not of the coroner, whose only duty was to ascertain the cause of death, as to which the witness had stated his opinion The coroner accordingly adjourned the inquiry and ordered another medical man to make a post-mortem examination At the adjourned inquest the second medical man gave evidence assigning a different cause of death from that given by the first and the jury adopted his view in their verdict, adding a rider to the effect that the first medical man was deserving of censure for the manner in which he had given his evidence at the first inquiry The coroner accordingly addressed the first medical witness, endorsing the view taken by the jury, and upon being applied to by him for his fee refused it To this the witness replied by a threat of legal proceedings which the coroner told him he was welcome to take Whether such legal proceedings have in fact been commenced we are not aware but if they are they will no doubt result in a statement of the coroner's powers in such matters The section of the Coroners Act of 1887 dealing with the fees of medical witnesses does so in the following manner ‘A legally qualified medical practitioner who has attended at a coroner's inquest in obedience to a summons of a coroner under this Act shall be entitled to receive such remuneration as follows—that is to say —(a) For attending to give evidence at any inquest whereat no post-mortem examination has been made by such practitioner one guinea (b) For making a post mortem examination of the body and for attending to give evidence thereon two guineas ’ The plaintiff in such a case as that described would presumably, therefore, have to establish either that the coroner was obliged to allow the fees of a medical witness who ‘attended’ the inquest, whether he refused to answer reasonable and relevant questions or not, or that in the particular case under discussion the answers given or refused and the conduct of the witness generally were not such as to disentitle him from receiving his fees In the second event supposing it were decided upon the first point that the coroner might on proper occasions withhold the fees, the question would be discussed whether and to what extent any other court could review the coroner's exercise of his discretion If the matter goes further it may prove of interest to coroners desirous of knowing the limitations placed upon their powers and to medical witnesses who are sometimes not well treated at inquests It is to be observed that in criminal courts the fees of medical witnesses are in the discretion of the court as to their amount The fee of not more than a guinea, or whatever the maximum sum may be in the circumstances, “may’ be paid to the witness At coroners' inquests the witness is “entitled to receive’ a definitely prescribed remuneration if he is to receive anything at all The latter is a more satisfactory arrangement for all parties, as the witness knows what he is going to get and, were it universal, magistrates and others would not be tempted to try to economise public funds at the expense of witnesses who have performed a public duty The want of uniformity is a matter worthy of attention and remedy

SUBPERIOSTEAL FRACTURES OF THE HUMERUS IN CHILDREN

AMONG the fractures formerly overlooked which have been revealed by skiagraphy are “subperiosteal fractures” in children This class of injury has been described by American surgeons but does not appear to have received much attention in this country The ordinary green stick fracture is, of course, subperiosteal but the “subperiosteal fracture differs from it in that there is no deformity but a clean cut crack or cross fracture without any bent or half broken layer of bone The intact periosteum prevents crepitus or mobility This form of fracture appears to be common in children and must therefore often be overlooked In the *Boston Medical and Surgical Journal* of August 11th Dr J S Stone has reported five cases of subperiosteal fracture of the humerus which were observed in the Children's Hospital, Boston between May 18th and Dec 30th 1903 In the first case, a girl, aged 11 years, fell from a swing, injuring the right arm When she went to the hospital two days later she could not raise the arm from the side but the forearm was freely moved No fracture was found As she was very nervous the disability was thought to be hysterical and a sling was applied Some atrophy of the deltoid followed After a fortnight the arm could be raised somewhat and after six weeks movements were perfectly free Three weeks later she was examined more thoroughly and an irregularity of the surgical neck of the humerus was found There was slight forward projection of the upper end of the lower fragment The amount of callus was small A radiograph confirmed the diagnosis which, however, was made only in view of the two next cases In the second case a girl, aged 10½ years was taken to the accident room She had that day fallen down four or five steps, hurting the left arm She could not raise the arm from the side Careful examination revealed no fracture Injury of the deltoid was diagnosed On the following day she went to the out patients' department There were then marked swelling and ecchymosis in front of the neck of the humerus and slight thickening of the bone The arm could be moved freely but it could not be abducted Passive movement was free in all directions and caused little pain A radiograph showed a transverse fracture of the surgical neck The upper end of the lower fragment projected forwards and there was impaction of about a quarter of an inch posteriorly, causing slight forward curving No attempt was made to correct the slight deformity and splints were applied Considerable atrophy of the muscles of the shoulder followed in a few days Perfect movement was regained In the third case a girl, aged six and a half years, was taken to the hospital Two and a half weeks before she fell from a fence Afterwards, in spite of the fact that she had no pain, she could not raise the arm from the side There were considerable atrophy of the deltoid and supraspinatus muscles, slight atrophy of the infraspinatus and complete inability to abduct the arm A slight bony projection was felt in the surgical neck where a radiograph showed a transverse fracture. There was slight displacement forwards of the upper end of the lower fragment with slight impaction posteriorly and forward curve. A shoulder cap and sling were applied. The resulting callus was small and complete movement was regained. The remaining two cases are quite similar. The cases resemble one another so much that diagnosis of subperiosteal fracture of the neck of the humerus should be possible without the aid of the radiograph. The fractures occurred after the age at which greenstick fracture is most common, were produced by a fall on the outstretched arm, and were followed by inability to use the deltoid and to raise the arm from the side. Atrophy of the deltoid and muscles of the shoulder took place. There was a sharp, bony ridge on the anterior surface of the neck of the humerus which might easily be overlooked. Therefore, when a child cannot abduct the arm after a fall and presents none of the ordinary signs of fracture or dislocation, careful examination should be made to detect tenderness and thickening anteriorly below the head of the humerus. These signs should establish the diagnosis of fracture of the surgical neck and should deter the surgeon from further attempts to obtain crepitus by force. Of course it will be well to have a skiagraph taken, especially if there is any doubt.

THE TRIALS OF SMALL MOTOR-CARS.

THE recent trials of small motor-cars near Hereford cannot fail to interest many of our readers. Full accounts with the official results and awards are given in the numbers of the *Autocar* of Sept. 10th and 17th. The report of the judges shows the great improvement in small cars made during the last year. In 1903 there were only two or three makes of car under £200 in price which could be regarded as soundly built and trustworthy; to-day there are dozens. The cars in the Hereford trials were arranged in four classes according to price, varying from £150 to £200. They had to make 12 runs of about 50 miles each with the view of testing their power of making such runs without stop or breakdown. 35 competitors started and 26 completed the 620 miles. The report of the judges, which is minute and carefully drawn up, shows that the causes of breakdown were rarely vices inherent in motor-cars but due in most instances to slovenly workmanship in the fitting and connexion of water or petrol pipes, parts of the cooling system or of petrol service. The working parts of the cars are pronounced as very good but in many cases badly put together, these working parts, such as gear-cases, tanks, and steering-gear, being inefficiently placed on the frames. The frames themselves have very much improved and the tyre troubles were exceptional, as might be expected with lightweight cars. The observed errors of construction are all such as manufacturers can easily avoid and will avoid when their market extends. The cars varied in nominal horse power from six to ten and few carried more than two passengers. One engine only had two cylinders but to sell a two-cylindered car at this price two years ago would have been quite impossible. The tables drawn up by the judges contain comparisons of the competing cars in such important points as "ease of manipulation, brake tests, petrol consumption, comfort of passengers, hill-climbing, vibration, noises," for all of which awards were made according to a previously arranged scale of marks. For general excellence of design and construction medals were given and future purchasers of small cars would do well to consider the list. The De Dion-Bouton firm, which has always had a deserved reputation for small cars, is now finding keen competitors in Birmingham and Coventry, for the Wolseley, Siddeley, Swift, and Humber companies have all taken good places in the results. The performances of these little cars will unquestionably produce wide changes in the methods of locomotion of medical men all over the country, for the standard of work performed was exacting and the results were excellent.

"BOGUS BUTTER."

HOWEVER slack or apathetic our honest traders may be, there seems to be no want of enterprise on the part of those whose aim is to swindle. On Sept. 14th at Heywood a young man with several aliases, all purporting to be Irish, was fined £40 and costs, with three months' imprisonment in default of payment, "for selling butter which was not of the nature, substance, and quality demanded." He had been previously convicted for a similar offence. Fraudulent dealing as to food deserves severe punishment. There were two cases and the fine was £20 and costs in each case. The first sample taken showed 11½ per cent. of water and 80 per cent. of fats other than butter and it was said to be "nothing less than margarine and not good margarine at that." We cannot suppose that those who sell margarine as butter would be very particular as to the source or wholesomeness of the fats which they use. The solicitor for the Lancashire county council alleged that the defendant was one of a gang of men who were engaged in a butter swindle in different parts of the country. They took shops in various towns and whenever a sample was taken at one of them there was a general "merry-go-round" of the men engaged in the business, so that it was extremely difficult to find who were the principals and really responsible. A handbill was issued at the Heywood shop and similar ones were posted in five other towns, so that some parts of Lancashire are well supplied no doubt with this "bogus butter." The poorer people who are the chief customers suffer heavily from high prices for inferior food. There was a sequel to this case on Sept. 19th, when at the Stalybridge police-court this same enterprising young man was again summoned for selling "bogus butter" on two occasions and fined £20 for each case. The analyst's certificate said in regard to each sample: "This is not a sample of butter; it contains 100 per cent. of margarine." It seems that when short of their "butter" at Heywood they sent to the shop at Stalybridge for it and *vice versâ*. If these fines of £80 occur frequently the profits of the fraud will be somewhat reduced and sufficiently so, let us hope, to make their perpetrator turn his attention to other fields of "industry."

THE STATUS THYMICUS.

THE few carefully examined cases of status thymicus that have been recorded in recent years have served to throw little light on this curious and grave constitutional condition the pathogenesis of which is still obscure. Persons affected with this diathesis are liable, under anæsthesia for example, to collapse and the danger of sudden death. An account of the symptoms and of the appearances, anatomical and pathological, of the status thymicus was given in an annotation in THE LANCET of March 24th, 1900, p. 869. The condition known as status thymicus is defined as a constitutional disorder characterised by persistence and hyperplasia of the thymus and lymphatic glands, frequently associated with arterial hypoplasia and the osseous evidences of rickets. In the *New York Medical Journal* of August 27th Dr. Frederick Simmons records a case of special interest in which a thorough post-mortem investigation was made. Such records are very rare and in this case status thymicus was suggested as the cause of death and the diagnosis was verified by the necropsy. The patient was a boy, aged ten years and seven weeks, who was under

Dr. Simmons's care suffering from muscular twitchings and "presenting a typically adenoid facies." Examination showed the presence of enlarged tonsils and naso-pharyngeal adenoids. The chest was flat and marked with costo-sternal nodules. The extremities of the long bones were somewhat enlarged but there were no other signs of rickets. The heart was normal to palpation and auscultation. A long and tight prepuce was discovered and at the operation decided on for removal of the naso-pharyngeal adenoids the patient was circumcised. He took chloroform well and the circumcision was rapidly performed. The head was then lowered and the adenoids were removed without further anæsthesia. At the last stroke of the curette the anæsthetist remarked a sudden failure of the pulse and immediate cyanosis of the face. Respiration suddenly came to a stop. Artificial respiration was at once applied by Silvester's method, stimulants were administered in the form of amyl nitrite and nitro-glycerine, strychnine, and electricity to the chest, while inhalations of oxygen were given. After working for three minutes respiration returned and continued for three or four inspirations and expirations, and then ceased. Artificial respiration was then resumed and continued for 45 minutes, while all the other means mentioned above to restore the heart and breathing were applied. The pulse, however, never returned, cardiac action remained imperceptible, and the attempt to revive the patient had to be abandoned finally as hopeless. The necropsy revealed an extreme venous engorgement with dark blood of all the organs, including the brain. A few adhesions between the dura mater and the cerebral hemispheres were present as well as a few scattered tubercles in the meninges. Upon opening the chest a large thymus gland deeply congested and measuring two by three inches was found. The lungs were normal. There was some frothy mucus in the bronchi. The heart was not enlarged. The right ventricle was perfectly flaccid, the left being firm and empty of blood had apparently stopped in systole. The myocardium and valves were normal. The bronchial and mesenteric lymph glands were enlarged everywhere (hyperplasia) and the spleen was very dark and congested, the case being clearly one of status thymicus.

LUNACY IN AUSTRALIA.

LUNACY administration in the colony of Victoria is at present to some extent in a state of transition owing to a new Lunacy Act which is now becoming effective. In the lunacy statistics for 1903, issued by the inspector of lunatic asylums, an outline of which was given by our Australian correspondent in THE LANCET of August 20th, p. 570, reference is made to the possibility of some modifications of the existing system being introduced. The powers contained in the new Lunacy Act of Victoria "will no doubt be used," says the report, "to provide at an early date some institutions, such as receiving houses, where the sanity of doubtful cases can be tested. It has been suggested that persons suffering from acute alcoholism should be received into these institutions. The wisdom of the policy of mixing such cases with the doubtfully insane is," adds the inspector of lunatic asylums, "open to serious question, and it must greatly increase the cost of buildings both in structure and upkeep." It is shown that the cost of maintenance of all institutions and patients during the year amounted to £135,795, the actual cost of maintenance of patients being £131,042, and the average weekly cost per patient 11*s.* 7*d.* Deducting the amounts received from the relatives of patients and from other sources the net cost of maintenance still remains as high as 10*s.* 4*d.* per patient. Economy has been practised wherever practicable and expenditure kept within the limits consistent with the well-being and comfort of patients. The introduction of receiving houses would add seriously to the burden of cost unless the cases admitted are restricted to actual and early cases of insanity only. The average recovery-rate for patients in all institutions during the year was calculated as being 7·4 per cent. of the average number resident, while the rate of mortality was 8·3 per cent. "The possibility of keeping our patients out in the open air all the year round," concludes the report, "makes tubercular disease far less dangerous than in England. As, however, there are severe cases in all our asylums I would again recommend," says the inspector of lunacy, "that special wards be erected at the Sunbury Asylum where they can be segregated." Special precautions have been taken at the Idiot Asylum, Kew, to prevent danger of overcrowding and contagion from tuberculosis.

"MACGREGOR FUND" IN AID OF THE LIVERPOOL SCHOOL OF TROPICAL MEDICINE: CONGRATULATORY BANQUET TO SIR *WILLIAM MACGREGOR.*

Sir William MacGregor, M.D., K.C.M.G., C.B., late governor of Lagos, who has been recently appointed governor of Newfoundland, was entertained to dinner at the Palatine Club, Bold-street, Liverpool, on Sept. 16th by Sir Alfred Jones, K.C.M.G., the chairman of the Liverpool School of Tropical Medicine and president of the Liverpool Chamber of Commerce. In addition to the principal guest were the Lord Mayor (Sir Robert Hampson), Sir Ralph Moor, K.C.M.G., Professor Rubert Boyce, F.R.S., and others. Sir Alfred Jones, in proposing the toast of the health of Sir William MacGregor, described him as the best governor whom West Africa ever had. They were very sorry to lose him and he congratulated Newfoundland upon having acquired him. One thing he could never forget and that was the way in which Sir William MacGregor had helped the Liverpool School of Tropical Medicine to make the tropics healthier than they were; in fact, none could dispute that Sir William MacGregor was the father of that school. Sir William MacGregor, who was warmly received on rising to respond to the toast, said that in going to Newfoundland he was not going away from the influence of Liverpool. As long as he had known them the merchants of Liverpool had always recognised that the possession of money brought along with it a certain responsibility. There were among them a strong vein of unselfishness and a recognition of native rights, as exemplified by their assistance to the Lagos Institute and the splendid work of the Liverpool School of Tropical Medicine, of which Sir Alfred Jones was the founder. The latter work, he assured them, was having a great influence not only on the traders but also on the native races, and they would find that in proportion as they increased the sanitary condition of West Africa they would increase their own trade. He trusted that before long the school would be put on a national basis and would be able to extend its work into the enormously extensive sphere only the fringe of which had as yet been touched. The toast of "The Liverpool School of Tropical Medicine" was responded to by Professor Boyce who said that Sir William MacGregor was one of the first to take to heart the lessons enunciated by Major R. Ross in regard to the health of West Africa. Many young men without prospects were working in the direction of promoting health in West Africa and one of them, a Canadian, while engaged in that work was paying another man to make investigations in other directions. Sir Alfred Jones said that he was desirous of raising a fund, to be called the "MacGregor Fund," in aid of the School of Tropical Medicine, to which he would subscribe £500. He was followed by Mr. John Holt (vice-chairman of the African Trade Section of the Chamber of Commerce) who said he would contribute £200 and by Mr. H. Cotterell who promised £50. Mr. Miller said that his firm would also subscribe.

THE MUNICIPALISATION OF MEDICAL SERVICE.

WE shall watch with interest a new experiment in contract practice which is on its trial on a large scale in the city of Zürich. In this socialistic centre the medical profession are, as it were, "pooling" their practices. There is a communisation of their services and each inhabitant is to pay a yearly contribution of 3*s.* 7½*d.* The income from this source, which approximately amounts to £20,000, is divided in equal shares among the 40 medical men who constitute the "pool." A simple calculation shows that the income of each will be £500 per annum. Although there are many theoretical advantages in annual contracts between medical advisers and their patients, more especially when the former take upon themselves the duty of keeping their patients in health as well as of attending to them when they are actually ill, nevertheless there are practical disadvantages which for the present, at all events, would be calculated to interfere with the success of any such plan if extended to the better class practices of this country. We are not yet in possession of the working details of the scheme on trial in Zürich. We presume that some such method is in operation as that adopted by provident dispensaries and clubs in this country—that is to say, that a certain definite group of patients is allocated to each medical man, and that only within limits are the former permitted to choose their own medical adviser. If the citizens of Zürich are permitted to exercise their own discretion as to the medical man whom they are to consult it is obvious that the most popular practitioners will be seriously overworked. On the other hand, if the patients are compelled to intrust the care of their health to the hands of a man in whom they have no confidence there will be ample room for discontent.

PERITONITIS DUE TO THE PNEUMOCOCCUS.

RECENT bacteriological researches have proved that the pneumococcus may produce pathological changes in many parts of the body other than the lungs; thus cases of peritonitis, of suppurative or phlegmonous gastritis, and of appendicitis occur from time to time in which the pneumococcus can be demonstrated as the cause. Dr. M. von Brunn discusses the general features of pneumococcus peritonitis in *Beiträge zur Klinischen Chirurgie*, Band xxxix., Heft 1, and summarises his results as follows. The condition is relatively a rare one; it occurs more often in children than in adults and more in girls than in boys. It may be primary in the peritoneum or may be secondary to affections of the lung or middle ear due to the pneumococcus. Considered from the clinical standpoint the chief features of the affection are in typical cases an onset like that of an acute peritonitis, passing afterwards into a chronic stage with relatively few peritoneal symptoms. Pathologically, the appearances produced are suggestive, though, of course, the diagnosis can only be made after bacteriological examination. The process leads at an early stage to adhesions and to localisation of the exudate, which is very coagulable and rich in fibrin, of greenish-yellow colour, and not offensive. The prognosis is favourable; spontaneous recovery though possible is rare. The treatment consists in freely opening the abscess cavity and draining, recovery being the rule. There are perhaps few organisms producing such widely different affections as the pneumococcus and it would be a matter of great interest and value if the mode of entry to some of the organs primarily affected could be more definitely determined, for in the primary peritoneal cases Dr. von Brunn admits that the explanation of their origin is far from satisfactory. It has been suggested that infection occurs in some cases through the appendix but this would certainly not account for all. The pneumococcus seems to have a predilection for serous membranes as well as for the lung, since pleurisy, pericarditis, peritonitis, and meningitis due to it are all described, and in all the cases the exudate presents similar characters to those described by Dr. von Brunn in peritonitis.

RUSSIAN PRECAUTIONS AGAINST CHOLERA.

THE chief medical inspector has returned from a six weeks' tour in the country bordering on the Persian confines where he concerted measures for preventing the importation of cholera from Persia. He asserts that the most comprehensive arrangements have been made particularly to keep the workmen's quarters of the towns clean and the workpeople well supplied with good water, food, and healthy houses. Orders have been issued for instant isolation in case of suspected illness and the disinfection of all things connected with the sick. At the ports on the Caspian Sea observation stations have been established, with special steamers attached to the health service, and a complete series of hygienic stations have been provided for the whole length of the river Volga, the great water highway leading from the Caspian Sea through a great part of Russia. Particularly Astrakhan and Baku have to undergo a thorough cleaning. In the latter town incredible filth had been found in the workmen's quarters. There unhealthy houses are to be closed until they are put into a sanitary condition and temporary barracks meanwhile are to be provided. The medical staff and sanitary officers have been largely increased, hospital accommodation has been selected, and abundant supplies of disinfectants and medicines are being laid in. "Unfortunately," says the notice in the *Novoe Vremya*, "our towns are in such an insanitary state that it will require tens of millions of roubles and years of time to answer to the medical requirements." The Transcaucasian territory is the real danger zone. Temporary hospitals have been installed there and the medical staff has been reinforced, including drafts from the Red Cross Society. Chief Inspector Anrep does not anticipate an invasion of cholera this year but profiting by experience gained from past epidemics he entertains grave fears for next spring and summer. Further details as to cholera in the Near East will be found in the communication from the British delegate to the Ottoman Board of Health which appears in another column.

THE death on Sept. 16th is announced of Mr. Charles W. Izod, M.R.C.S. Eng., L.S.A., of Esher, Surrey, which took place at Whitehall Court, Westminster. We gave a concise account of this gentleman's notable record in THE LANCET of May 17th, 1902, p. 1434. Mr. Izod had been surgeon at Claremont, near Esher, to the household of Leopold I., King of the Belgians, to that of the late Queen Victoria, to that of the King of the French, *Louis Philippe* and his family, and to that of the Duchess of Albany. He retired in June, 1902, after 55 years' practice.

THE winter session of the West London Post-graduate College, West London Hospital, Hammersmith-road, W., will commence on Thursday, Oct. 13th. The opening address will be delivered by the Right Rev. the Lord Bishop of Oxford at 5 P.M. on that date and medical men desirous of attending can obtain a ticket on applying to Mr. L. A. Bidwell.

DR. J. Lorrain Smith, the newly appointed professor of pathology, will open the medical session of the University of Manchester by delivering an introductory address on Monday, Oct 3rd, at 4 30 P M, to which members of the profession residing in or near Manchester are invited

THE address at the opening of the Medical Faculty of the University of Birmingham will be delivered by Dr P H Pye Smith on Oct 3rd

THE EVOLUTION OF MAN'S DIET

BY HARRY CAMPBELL M D, F R C P LOND,
PHYSICIAN TO THE NORTH WEST LONDON HOSPITAL AND TO THE HOSPITAL FOR NERVOUS DISEASES WELBECK STREET

III [1]

THE RELATIVE QUANTITIES OF ANIMAL AND VEGETABLE FOOD CONSUMED DURING THE SUCCESSIVE DIET EPOCHS

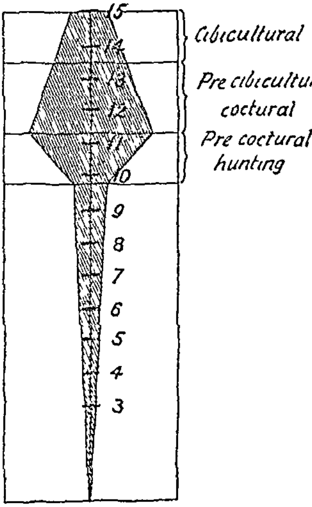
WE may now fittingly consider the fluctuations in the relative quantities of animal and vegetable food which have occurred in the diet of evolving man at various stages As our anthropoid and homo simian precursors grew in intelligence they were naturally able to secure more and more of the much coveted animal food such as insects, grubs reptiles, eggs, birds, and the smaller game and there took place in consequence a steady rise in carnivorism during the anthropoid and homo simian stages but especially during the latter Nevertheless, we may regard it as certain that until the hunting and fishing period was reached our ancestors remained essentially vegetarian With the advent of this period however, they greatly increased in carnivor [illegible] *actually more carnivorous than* [illegible] carnivorous than vegetarian because [illegible] period, when by means of cookery man had greatly increased his supplies of easily digestible vegetable food he still continued to depend very largely upon animal food as is proved by the dietetic customs of existing pre cibiculturists It is true that many of these peoples inhabit barren regions affording a comparatively meagre supply of vegetable food but it may safely be asserted that *not the most luxuriant* and bountiful region in the world is capable of supporting by means of its uncultivated flora alone any existing pre cibicultural people even with the great help to be got from their elaborate systems of preparing vegetable food How much less capable therefore, must even the most fertile regions have been in pre coctural ages Now, though it is certain that animal food was included in the dietary of our anthropoid precursors there can be no doubt that they were not so incapable as man is of subsisting wholly on natural vegetable products, and from this we may infer that the evolving man during the homo simian and early hunting periods lost much of his power to digest raw uncultivated vegetable substances

Just as the discovery of cookery led to an increase in the quantity of vegetable food consumed so also did the introduction of agriculture and in an even greater degree for while the breeding of animals augmented the available quantity of animal food it did not augment it to anything like the same extent that agriculture augmented that of the vegetable food Certain communities or sections of communities do indeed at the present time subsist mainly on animal food, but taking agricultural communities at large they are certainly in the main vegetarian, and some, like the Hindus almost entirely so

To sum up our ancestors though remaining chiefly vegetarian slowly increased in carnivorism during the anthropoid and [illegible] chiefly carnivorous during the [illegible] carnivorous and half vegetarian [illegible] coctural period and thenceforward increasingly vegetarian again until the period of stationary agriculture was reached

As to the truth of these generalisations there can I think, be no doubt That man and his precursors have for hundreds of thousands of years been largely carnivorous that the incipient man actually subsisted more upon animal than vegetable food, that in fact, after evolving from his homo simian precursors man has mounted up all but the last one or two rungs of his evolutionary ladder on a highly animalised diet is as certain as anything well can be This cardinal fact must ever be borne in mind by those who seek to devise a rational system of diet for modern man To assume that disease and premature death necessarily result from taking animal food and that in matters dietetic physiological salvation is to be found in vegetarianism alone is to ignore the fact that for an extremely long period (10th to 11 5th grade) of man's phylogeny *he was actually more carnivorous than vegetarian* I am not forgetting that man was most carnivorous when in the hunting stage—when, namely, he was leading a highly active out door life, that during the agricultural period his organism became, and is still becoming more and more adapted to a cooked vegetable diet, that a large quantity of animal food often proves injurious to the modern man when leading a sedentary life, and that even the carnivorous dog when compelled to spend most of its life lolling about a house or chained up in a back yard is unable to tolerate a purely animal diet All this is very true, but because a mainly animal diet is apt to be injurious to those leading sedentary lives we must not on that account and in the face of his past history assume that the only diet suitable for man is the purely vegetable

FIG 5



ALTERATION IN THE NATURE OF THE VEGETABLE FOOD CONSUMED DURING THE SUCCESSIVE DIET EPOCHS

Before the introduction of cookery all vegetable substances save the luscious fruits needed considerable mastication in order to break up their cellulose framework, and the denser and more abundant this framework the more mastication did they stand in need of Naturally, therefore owing to that innate desire to economise labour which characterises all sentient beings the denser and more bulky vegetable substances would be less in demand than the less dense and more concentrated and similarly, insipid, bitter or acrid foods would find less favour than more palatable kinds *Consequently* as the evolving man became during the homo-simian and hunting periods but especially the latter less and less dependent upon vegetable food there was a progressive abandonment of the most dense, bulky, and unpalatable kinds in favour of their opposites and thus it was that by the beginning *of the coctural period man had* by discarding lost the power of digesting in the raw state many of the coarser and more unpalatable varieties on which his anthropoid ancestors subsisted and on which presumably, existing anthropoids still to a large extent subsist

With the advent of cookery and the extra quantity of easily digestible vegetable food which it rendered available man became still less dependent upon that which was raw and uncultivated and this led to a further abandonment of, and loss of power to digest, the least choice varieties. Finally, agriculture has rendered man wholly independent of raw, uncultivated vegetable food by placing at his disposal an abundance of pleasant, easily digestible and highly nutritious vegetable foods, which are consumed either in the raw state, as in the case of fruits, or, as more generally happens, after elaborate preparation. Hence, he has lost the power of digesting in the unprepared state all but the very choicest varieties of wild vegetable foods, such as the luscious fruits and certain nuts, and even the latter he often finds difficulty in digesting, though this, it must be acknowledged, is usually due to defective mastication.

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[1] Nos. I and II were published in THE LANCET of Sept. 10th (p. 721) and 17th (p. 848), 1904 respectively

ALTERATION IN REGARD TO THE SACCHARIDES INGESTED DURING THE SUCCESSIVE DIET EPOCHS.

Before the agricultural period the supply of soluble saccharides—grape sugar, fruit sugar, cane sugar—was comparatively small and was derived mainly from the luscious fruits and from honey, which from the anthropoid right into the agricultural epoch has constituted an important source of saccharide for the evolving man. With the advent of the agricultural period, however, and the cultivation of the date, the fig, the banana, and in later times the sugar cane and beetroot (from both of which cane sugar is extracted in enormous quantities), the supply of soluble saccharide has reached astounding proportions.

The quantity of starch consumed increased with the introduction of cookery, by means of which many vegetable substances useless in the raw state were converted into valuable foods; and it was, of course, still further increased by the introduction of agriculture. And not only was more starch now taken, but this increased quantity was subjected to far less mastication and insalivation than in pre-coctural times and consequently the quantity entering the stomach in a crude state underwent a great increase, and in this age of pap, when it is the custom to consume starch for the most part in the soft, pappy, or even liquid form, it has gone up by leaps and bounds, a circumstance which I hold to be responsible for a great deal of disease.

INFLUENCE ON FUNCTION OF THE CHANGES IN THE DIET OF THE EVOLVING MAN.

The ability to digest animal food rose and fell with the quantity consumed during the various diet epochs and was thus greatest during the early hunting stage, while the ability to digest raw vegetable foods, especially of the coarser kinds, has steadily diminished from the anthropoid stage until the present time. One can scarcely doubt that our anthropoid ancestors had special powers of coping with cellulose and, one may add, with the bitter and acrid constituents of many vegetable foods; it would be interesting to make observations on existing anthropoids in regard to this point. It is known that some of the vegetable foods of the great apes are bitter, and that sour foods are not distasteful to some at least of them is shown by the fact that they sometimes display a great liking for them. Seeing that not even the herbivora secrete juices capable of digesting cellulose, but depend upon bacterial action for its digestion, one would not expect the anthropoids to secrete a ferment capable of dissolving it but there can be little doubt that they possess special facilities for dealing with this substance.

Up to the discovery of cookery mouth-digestion was more active than it has since been, owing to the prolonged trituration to which it was necessary to subject the raw vegetable foods. One may presume, therefore, that the amylolytic power of the salivary glands was greater in pre-coctural times than it has since become, especially in these days of pap, when the starchy foods slip down into the stomach with a facility which can only be characterised as disastrous.

Inasmuch as up to the coctural period most of the saccharides were swallowed in the soluble form—e.g., grape sugar, fruit sugar, cane sugar, maltose, and the dextrines—we may assume that up to this time the stomach and intestines were intolerant of large quantities of starch, but that after the introduction of cookery their ability to cope with this substance steadily increased, becoming ultimately greatest in those communities which, like the Hindus, are essentially vegetarian. In like manner the power of digesting cane sugar must have been increasing within quite recent times in correspondence with the large quantities now consumed.

The functional adaptations just referred to have been not only individual but racial, the latter having been achieved by natural selection—i.e., by the survival of those best able to adapt themselves to the dietetic changes. We see this racial adaptation going on under our very eyes. Tens of thousands of starch-deluged and bottle-fed children are in our own country yearly weeded out, those best adapted to these modes of feeding surviving and transmitting their digestive peculiarities to their offspring. Thus a race is evolving which is capable of being reared on cow's milk during infancy and of digesting enormous quantities of starch and sugar.

INFLUENCE ON STRUCTURE OF THE CHANGES IN THE DIET OF THE EVOLVING MAN.

These various phylogenic changes in digestive function have had, it is needless to say, a structural basis, though the gross structural changes which have taken place in man's digestive system during his gradual ascent are less pronounced than one might perhaps expect. We have, of course, no exact anatomical knowledge of the digestive organs of our anthropoid precursors, but we know that they must have been very like those of existing anthropoids; and by striking their anatomical mean in these animals we shall get a fairly accurate notion of them as they existed in the homo-simian. At present it is not possible to determine this mean, for, unfortunately, the necessary facts are not forthcoming. One thing, however, is certain—viz., that there is a remarkable general resemblance between the digestive organs of man and of the anthropoids—a fact which renders it practically certain that they have undergone little gross structural change since anthropoid times. It is to be hoped that the comparative anatomy of the digestive system in the great apes will soon be worked out in minute detail, so that we may be in a position to say what changes have taken place in it, as this would give a clue as to the dietetic changes which must have, *pari passu*, occurred. A few known anatomical peculiarities in the digestive organs of the anthropoids may here be referred to. The dental formula of the anthropoids is the same as for man, though the teeth of the former are larger and stronger than those of the latter, being evidently adapted for coarser and more vigorous work. The tongue of the anthropoids is said to be small, which is somewhat surprising. The lingual papillæ in the aged gorilla acquire a horny hardness and the circumvallate papillæ of this ape are arranged -shaped, as in man; in the chimpanzee they form a T or a +. Owen and Virchow state that the small intestines are devoid of valvulæ conniventes in all the apes, but it would appear that they do actually exist, though in a rudimentary form, in some; in any case, however, they are certainly not so developed as in man, and this constitutes one of the most striking anatomical differences in the digestive systems of man and the great apes. In all the great apes the cæcum is provided with a vermiform appendix; in the orang this structure is long and convoluted; in the chimpanzee it is constricted at its origin. In none of the great apes is the cæcum provided, as in the case of the monkey, with a mesentery. The liver of the orang bears a remarkable resemblance to that of man (Virchow). The gall-bladder of the chimpanzee is considerably larger than in man. Professor Keith in a letter to me lays stress upon the great similarity between the digestive organs of the anthropoids and of man, the main differences according to him being the greater muscularity of the stomach and the less complete development of the valvulæ conniventes in the former case. Not only do we lack a minute knowledge of the anatomy of the digestive system in the great apes, but we are not even able to state precisely how far existing pre-cibicultural peoples differ in regard to their digestive organs from us moderns. Information on this point is much needed. It does not seem likely that any marked change has taken place in the digestive system since the negro, Mongol, and Caucasian diverged from their common ancestor, inasmuch as, though there may be differences in detail, it is practically the same in all of them; and this suggests that the chief differences between man and his anthropoid precursor in respect of the digestive system were brought about before the specialisation of the three great families—i.e., in the simian period, prior to the evolution of the tenth grade; and if such is the case we may conclude that the food of the evolving man underwent very decided changes during that period.

Probably the most obtrusive change which has taken place in the alimentary system since the anthropoid period is to be found in the maxillary apparatus, but this is not wholly, if indeed mainly, connected with diet. It should be noted that primeval man, even as late as the latter part of the pre-coctural period, was obliged to use his jaws in eating [illegible] as did his anthropoid [illegible] *oh*, perhaps, on account [illegible] uantity and density of [illegible] is period But against [illegible] quantity of animal food consumed, which must have led to a corresponding increase in what may be called the carnivorous use of the jaws, in which the masticatory muscles are made to contract with greater force, though for a shorter time, than is required by raw vegetable food.

Now, there can be no doubt that long before the discovery of cookery the jaws had largely lost their bestial character and had assumed an essentially human aspect, and it is obvious from what has just been said that the profound change which they underwent in the pre coctural period cannot be explained by reference to dietetic changes It was probably in part brought about in correlation with the progressive expansion of the cranial cavity which has marked man's ascent from the anthropoid, but it was also largely due to the fact that as the evolving man came, in his encounters with other animals, to rely more upon his intelligence and less upon mere brute force he stood correspondingly less in need of massive prognathic jaws which constitute for a large number of animals the most deadly weapon of encounter. Directly man began to fashion weapons we may assume that he practically ceased to use his jaws as a means of offence and defence, and that thereafter the progress from prognathism to orthognathism was more rapid than during any previous period The changes in the maxillary apparatus which have taken place in civilised times have been connected partly with the increasing softness of the vegetable food, and have, perhaps, partly also been brought about by sexual selection, highly animal jaws being, in the woman at least, a bar to marriage.

INFLUENCE ON MENTAL AND SOCIAL EVOLUTION OF THE CHANGES IN MAN'S DIET.

We see from what has been already said what an important part food has played in influencing man's habits and social evolution—how the invention of weapons and other artifices for securing game changed the evolving man from a comparatively stationary being to a wandering hunter, how, again, [illegible] than heretof [illegible] finally, with [illegible] and less a n [illegible] was reached, it died right out (except as a pastime), a sufficiency of food being artificially produced by a small section of the community, leaving the remaining portion free to specialise in other directions, and so rendering the evolution of a complex social organisation for the first time possible.

We may here consider in some further detail the influence on man's mental and social evolution of the changes which his diet has undergone during each of the successive diet epochs. Directly the hunting stage was reached and primeval man exchanged his comparatively stationary life for a wandering one a great change came over his habits of life, a change which *cannot have failed to exercise a profound* influence on his evolution Among all existing primitive peoples the hunting is undertaken by the men and we may be sure that this was the case from the very beginning of the hunting period Hence it seems probable that with this period there began the first real division of labour other than [illegible] this exception [illegible] d the two sexes [illegible] much the same share in the food quest—in searching for fruits, seeds, roots, insects, grubs, eggs, and the like—though, as we shall see later, even at that early period the task of collecting the vegetable food may have been chiefly undertaken by the female section of the community, but when the men began *to devote themselves to the hunt the duty of gathering the* vegetable food fell more and more to the lot of the women, each sex possibly playing an equal part in securing food from among the smaller species of animals.

Man remained a hunter right through the early coctural period and well on into the agricultural, from, let us say, the tenth to the fourteenth stage, while, in fact, he was putting on 400 cubic centimetres of brain tissue, and one can hardly doubt that this circumstance profoundly influenced his mental evolution and played no small part in causing the mental differences between the two sexes—e g , the greater development in the man of nervous activity, love of adventure, courage, bellicosity, ingenuity, and intellectuality generally With the advent of the hunting period mental evolution received, in fact, a great impetus, but all in *favour of the development of the male* His observant faculties, inventive powers, and cunning were called into play as they had never been before He was led carefully to observe the habits of animals, to devise means of deceiving them, to invent traps for ensnaring and weapons for destroying them, while his courage, his willingness to encounter danger and his acumen in avoiding it, were continually being tested; and we may be quite sure that those hunters who showed the greatest aptitude in these regards stood the greatest chance of survival, were most likely to secure the largest bags, to be recognised as leaders, and to leave the most numerous offspring to inherit their excellences, and seeing that natural variations appearing in one sex are on the whole more apt to be transmitted to the same than to the opposite sex—seeing, too, that the human male remained for some hundreds of thousands of years essentially a hunter—there has been ample opportunity for these several qualities to become accentuated in the male sex

We may further trace a relationship between the diet epochs and man's fighting propensity In the pre coctural hunting period the family constituted the social unit It was only possible to hunt in small numbers, large numbers scaring the game away There was thus little opportunity for combinations among families and inasmuch as most of the man's time was occupied in the food-quest none but very desultory and spasmodic fighting was possible It is unlikely that food was to any extent stored at this time and it is obvious that systematic warfare cannot be waged on an empty stomach. But when the discovery of cooking and the practice of storing vegetable food released the hunter somewhat from his occupations tribal organisation and warfare became more common, especially in seasons of plenty, though it was not until the early cibicultural *period was reached that organised* warfare received its chief development The increase in the supply of food which marked this epoch rendered tribal organisation possible and man's fighting instinct, now at its acme, was allowed full play This instinct, for such it is, was not at first anti social except in so far as it was connected with the sexual impulse which impels all polygamous males to fight for the possession of the females It presumably took its origin in the need which man, in common with all animals, had for self protection, and while doubtless strengthened by the development of sexual combativeness it probably became still further accentuated during the hunting period, when man took on the aggressiveness of the carnivorous animal All the carnivora are fierce fighters, [illegible] and his [illegible] terrific [illegible] at there [illegible] greatly intensified during the hunting stage He made ruthless war upon every species of lower animal that crossed his path. His instinct to kill now developed in its most acute *form* When, therefore, with the increase of vegetable diet which came with the early coctural period and still more with the period of food culture he had leisure to turn aside from his onslaught on the lower animals it is scarcely surprising that his combative impulse should find vent in warring upon his own kind Moreover, the beginnings of possessions of value now frequently provided a *casus belli*. The early agricultural stage is probably the most horrible period of human bloodthirstiness, when man, unsoftened by the moral sense which slowly evolved with the slowly evolving social organisation, reached the very acme of his blood lust and insatiable desire for inflicting torture Now it was that fighting was [illegible] a means for some tangible and [illegible], slaves, or hunting-grounds, but [illegible] n order to secure scalps, heads, or other terrible trophies of war. I do not believe that this form of savage and devilish warfare was practised to any great extent before the cibicultural period. At the present day it is certainly not met with so much among the precibiculturists as among the early agriculturists, such as the natives of Africa, Borneo, and New Guinea.

(To be continued.)

THE FACULTY OF MEDICINE OF THE UNIVERSITY OF LONDON.

THE commencement of the winter session will witness the renewal of activity in all departments of medical education. Towards the end of October the Faculty of Medicine of the University of London will be called together by the authority of the vice-chancellor in order to elect a dean for the succeeding two years. It will come as a surprise to many and will be regretted by all that this meeting will mark the termination of the period of office of Mr. H. T. Butlin as first dean of the Faculty of Medicine of the University of London. By the statutes a dean of a faculty is elected for two years and is re-eligible for a second period of office only. Mr. Butlin having now rendered excellent service to the University for a period of four years the faculty is unable to ask him any longer to continue in office. The enthusiasm which Mr. Butlin has shown in furthering the development of the University on its new lines makes it certain that whether in office or not he will continue to render it service. It is much to be hoped, however, that Mr. Butlin may in the near future have further opportunities of actively and officially promoting the welfare of the University as a member of the Senate. Considerable responsibility rests upon the faculty in choosing its second dean. As time goes on there can be little doubt that the office of dean of the Faculty of Medicine of the University of London will become the most prominent position in the country in connexion with medical education. The presidencies of the various Royal Colleges will continue to be the highest posts of honour to which a medical man can be raised by the votes of his professional colleagues, the blue ribbons conferred upon the most eminent practitioners of medicine and surgery by those whose appreciation is a man's best reward. But if we rightly read the signs of the times the professional colleges will gradually yield to the universities the premier place as educational institutions. Admirable as has been the educational work of these colleges in the past and regretfully as we must see any curtailment of their activities, we cannot shut our eyes to the fact that their future destiny is to watch over the interests and to maintain the highest traditions of our profession rather than to secure the adequate education of those about to enter it. This separation of the professional and educational interests of the medical community, securing as it will the undivided energy of powerful organisations for the promotion of each interest, is likely to have a very beneficial result. It is well that the development of medical education should proceed on the broadest lines of educational progress and that those responsible for its direction should be in close touch with professors of every branch of knowledge. The scheme for a one faculty university has disappeared for ever and in the interest of medicine it is much to be hoped that before long the unequal preponderance of the medical faculty in London may be balanced by the proportionate development of each of the faculties which constitute the university. From its well-organised sister faculties the Faculty of Medicine will have much to learn and its capacity to learn and to take advantage of its acquired experience will in great measure depend upon the judgment with which it chooses its official head. Mr. Butlin has set all future deans an example which it will be difficult to surpass and the faculty should endeavour to secure as his successor one who will carry on the work in the able manner in which it has been inaugurated. Amongst the 350 members comprising the faculty the large number of suitable candidates is the only feature which should make the choice a difficult one. For the new dean and the faculty over which he will preside there is no lack of work if education in the great schools of medicine in London is to derive full profit from the reconstitution of the University. For the time being the scheme of concentration of early and preliminary medical studies has passed out of the hands of the faculty. The Senate has adopted the unanimous proposals of the faculty and an appeal committee is engaged in securing funds to start a university centre of preliminary medical education at South Kensington in accordance with these proposals. Meanwhile individual members of the faculty can give valuable assistance by bringing the appeal to the notice of influential friends and public bodies able to give financial help. So soon as the necessary funds are available the faculty will, no doubt, be invited to fill in the details of the scheme, the main outlines of which it has already submitted to the Senate for the organisation of the Institute of Medical Sciences.

While the scheme for the concentration of early medical studies outside the hospitals is satisfactorily initiated there is much to be done towards coördinating clinical study within their walls. The faculty is the common meeting ground of the clinical teachers from all the schools of medicine, and not the least important function that it is destined to achieve is to break down the barriers between the schools which have grown up as the result of many years of isolated work and mutual competition. In friendly discussion of proposals to strengthen their common university the partisans of different medical schools will learn that progress can be achieved more certainly by coöperation and the mutual sharing of burdens than by the competitive struggle for existence which has hitherto been the chief characteristic of the relationship of these vigorous institutions.

The faculty may well consider whether the unrivalled field for clinical study offered by the hosts of patients in public institutions in London is fully made use of for the training and information of students, for the continued instruction of qualified medical men, or for the advancement of the general sum of medical knowledge. We venture to assert that in every one of these directions the opportunities are very far from being fully utilised. The Faculty of Medicine provides the centre whence concerted action can be brought to secure the much-needed reforms in dealing with the great mass of clinical material which is at present wasted. A suggestion has been made that as a first step towards coöperation and as a visible bond of union between the schools of the University some of the best original work issuing from the wards and laboratories should be collected and published periodically as the Transactions of the Faculty of Medicine of the University of London. To such an enterprise we should offer a most hearty welcome. Although there are some estimable associations in London for enabling general practitioners to refresh their memories and to keep themselves abreast of modern developments of clinical methods, we feel that we shall not be accused of failing to appreciate their efforts if we assert that the higher class of post-graduate study is still awaiting the action of the University to establish it on a satisfactory basis. Amongst the teachers of the faculty it is to be hoped that a considerable majority is impressed by the degradation of true mental training that is resulting in England from the dominance of the examination system in medicine as in all other branches of study. The reconstitution of the University is largely the result of a revolt against examinational tyranny and it ought not to be impossible for the teachers to evolve a scheme whereby the work a student does in the laboratories and wards of a hospital shall have its due weight in determining his success at examinations. The junior teachers of the schools, who see so much of the evils of cramming for examinations, should remember that through the Faculty of Medicine their voices can be heard in the counsels of the University. Any scheme which they can persuade the faculty to approve will receive the sympathetic consideration of the Senate. The faculty as a deliberative and consultative body is essentially the meeting before which advanced views on all questions of medical education should be brought. Progress is only possible by the formation of a strong public opinion as to existing defects and possible remedies. It is much to be hoped that during the ensuing session the faculty may take its part in persuading the medical teachers in London that much remains to be done to insure that its University shall maintain its position as the greatest centre of medical education.

MORTUARY FOR STONEHOUSE (DEVON).—At the meeting of the Stonehouse urban district council, held on Sept. 13th, it was decided to erect a new mortuary, the old one being described by one of the members as a disgrace to the town.

CHOLERA IN MESOPOTAMIA, PERSIA, AND ARABIA.

(FROM THE BRITISH DELEGATE TO THE OTTOMAN BOARD OF HEALTH.)

ABSENCE from Constantinople has prevented me from continuing the story of the cholera outbreak in Asiatic Turkey and Persia. My last letter, which appeared in THE LANCET of July 16th, p. 176, brought the record down to the end of the first week in July. The most serious extension of the disease since then has been on the Persian side of the frontier, in Tehran and its neighbourhood. It has, moreover, spread to Meshed, Resht, and Astrabad and a single suspicious case—fortunately not followed by others—occurred early in August at Baku, on the Russian shores of the Caspian. The rumours that the disease had appeared in St. Petersburg and elsewhere in Russia are officially declared to be unfounded.

In Turkish territory the following has been the course of the outbreak in the last few weeks. At Basra the epidemic has, it is hoped, come to an end; the figures here in the last seven weeks of the outbreak were as follows:—

On July 6th	2 cases ...	2 deaths.
From July 7th to July 15th ...	2 ,, ...	2 ,,
,, ,, 16th ,, ,, 23rd ...	10 ,, ...	5 ,,
,, ,, 24th ,, ,, 30th ...	8 ,, ...	4 ,,
,, August 3rd ,, August 4th ...	2 ,, ...	2 ,,
,, ,, 5th ,, ,, 12th ...	5 ,, ...	1 death.
,, ,, 13th ,, ,, 19th ...	3 ,, ...	3 deaths.

Since the last date named no other known case of cholera has occurred in Basra.

At Bagdad, on the other hand, an outbreak of very considerable severity has been, and still is, prevailing. It will be recalled that the disease reappeared there on June 4th after an apparent absence of two months. The figures for the four weeks ending July 4th were given in my last letter. The following are the returns since that date:—

From July 4th to July 8th ...	3 cases ...	2 deaths.
,, ,, 9th ,, ,, 16th ...	4 ,, ...	2 ,,
,, ,, 17th ,, ,, 23rd ...	38 ,, ...	45 ,,
,, ,, 24th ,, ,, 30th ...	29 ,, ...	33 ,,
,, ,, 31st ,, August 6th ...	36 ,, ...	22 ,,
,, August 7th ,, ,, 13th ...	65 ,, ...	54 ,,
,, ,, 14th ,, ,, 20th ...	127 ,, ...	105 ,,
,, ,, 21st ,, ,, 27th ...	180 ,, ...	133 ,,

The totals for the present week will probably be still higher.

The outbreaks in the Shiah cities of Nedjef and Kerbela appear to have come to an end about the middle of July; from the former no cases have been reported since the 13th and from the latter none since the 20th of that month. At Suleimanieh, close to the Turco-Persian frontier, the mortality has been very high, as shown by the following figures:—

From July 12th to July 16th ...	47 cases ...	17 deaths.
,, ,, 17th ,, ,, 22nd ...	283 ,, ...	208 ,,
,, ,, 23rd ,, ,, 30th ...	342 ,, ...	469 ,,
,, ,, 31st ,, August 4th ...	131 ,, ...	228 ,,
,, August 5th ,, ,, 12th ...	83 ,, ...	162 ,,
,, ,, 13th ,, ,, 20th ...	39 ,, ...	51 ,,
,, ,, 21st ,, ,, 25th ...	32 ,, ...	31 ,,

It will be impossible to mention here the many places from which the presence of cholera has been reported. They are situated mostly along the valleys of the Tigris and Euphrates and in the adjoining plains. The disease has spread up the Tigris at least as far as Mossul, where an outbreak of some severity has recently begun. The highest [illegible] from Salahieh (in the Kerkuk [illegible] d a large number of villages in [illegible] rom among the numerous tribes inhabiting the lower reaches of both rivers. The extension of the infection up the Tigris to Mossul threatens Armenia, and through Armenia the Caucasus, with an epidemic; but the latter is still more seriously threatened by the alarming spread of the disease in Persia.

At the date of my last letter cholera had been epidemic for several weeks at Kermanshah and at many other places near the frontier; it has also spread to Kum and was reported to have appeared in Tehran itself, though nothing positive was then known as to the intensity of the outbreak there. Exact information is still lacking as to the extent of the epidemic in the capital or elsewhere but all reports [illegible] in the former at a very high [illegible] infection exists over a very [illegible] most exact figures have been [illegible] are as follows (in continuation of the figures given on p. 177 of THE LANCET of July 16th):—

From July 6th to July 12th ...	31 deaths.
,, ,, 13th ,, ,, 19th ...	21 ,,
,, ,, 19th ,, ,, 26th ...	(information lacking).
,, ,, 27th ,, August 2nd ...	6 deaths.
,, August 3rd ,, ,, 9th ...	14 ,,
,, ,, 10th ,, ,, 16th ...	10 ,,
,, ,, 17th ,, ,, 23rd ...	3 ,,

These figures have been furnished by the Turkish Consul-General at Kermanshah and are based on the returns of the local authorities; but according to reports from the Ottoman Embassy at Tehran they are much below the truth, as the latter state that the deaths at Kermanshah were at one time as high as 150 per day. From Kermanshah the cholera spread to a large number of other Persian towns and villages, some of which were mentioned in my last letter but one.[1] It reached Hamadan at the end of May or the beginning of June; in the first week of June five or six cases and two or three deaths were occurring there daily. The further course of the disease here is not fully known, but on July 6th it was reported from Tehran that 300 deaths daily had occurred at Hamadan in the preceding week. The infection seems to have spread thence to Kum, where from eight to ten deaths were occurring daily in the first half of June. The date of the first cases in Tehran is not known but some suspicious cases were reported in the second week in June and the epidemic seems to have increased rapidly. Almost the earliest case there was that of Dr. Vaume, the Turkish delegate on the sanitary board which is supposed to sit at Tehran. He had been sent by the Constantinople Board of Health on mission to Kermanshah and the surrounding infected districts and returned to Tehran disheartened by his inability to induce the Persian authorities to take any serious measures. Almost immediately after his return to the capital he was attacked by the disease and died after a short illness.

According to a report from the Ottoman Embassy at Tehran, dated August 2nd, the mortality in that city rapidly grew to 50 or 60 per day. It progressively increased to 100, 150, 200, 300, and even 500 a day. Later inquiries placed the mortality, when at its maximum, at an even higher figure than this, some estimating it at 1000 deaths daily, while others thought it had attained to 1500 deaths per day. The same report estimates the total cholera mortality in Tehran at between 15,000 and 20,000 but adds that other authorities think that at least 25,000 persons lost their lives. The epidemic spread to the surrounding villages, including those where the embassies and legations usually spend the summer months. Cases occurred in the staff of the Ottoman Embassy and among the attendants of the Shah himself. The sovereign had arranged to leave Tehran for Kazvin but the cases of cholera occurring among his attendants on the day of his intended departure he returned to his summer residence near the capital. The city was largely deserted at the height of the epidemic; the shops and bazaars were closed and all public offices stopped work. Almost no public measures of any kind were taken to control the epidemic. Cemeteries were established quite close to the town but the report quoted speaks of putrid emanations from the bodies of the dead which were presumably unburied or very imperfectly buried. At the date of that report (August 2nd) the deaths had fallen to 40 per day but it was added that with the return of the population to the city and the appearance of the disease in the Jewish quarter a slight rise in the mortality had set in. This increase does not, however, seem to have been maintained and the latest reports from Tehran state that the disease has almost disappeared. It may be added that reports from Russian sources confirm the above facts and figures and add that in Tehran the European colony almost entirely escaped the disease, only three deaths from cholera occurring among them. The severity of the outbreak in some of the villages is shown by the fact that in one village, with a population of 5000, as many as 1500 persons died from cholera. As usual in cholera epidemics the earlier cases were the most severe, many being fulminant in character, causing death in a few hours, but later the attacks assumed a milder form. No one, it is added, who entered the city from the surrounding districts for business purposes escaped an attack.

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[1] THE LANCET, June 25th, p. 1813.

Details of the cholera epidemic in other parts of Persia are almost entirely lacking. All that can be stated is that at the end of June cholera was present at Shuster, Dizful, Sine (? Sihna), and Kazvin; that on July 6th it was reported from Khanikin, on the frontier, that over 200 deaths daily were occurring at Yer, Jerid, Mehanend, and Hamadan-Serai and that the disease had appeared at Ratada; that on July 8th cholera had *not* reached Tabriz (on the authority of the Turkish vice-consul in that town); that on July 19th the outbreaks at Sultanabad and Burujird were stated to be increasing; that on July 31st the Turkish embassy at Tehran telegraphed that cholera was prevalent ("la maladie règne") at Shiraz, Ispahan, and Meshed; that on August 8th Bushire was reported to be still free from the disease though cholera was prevalent at six hours' distance from that port; and that on August 16th the Russian delegate to the Constantinople Board of Health informed the board that some cases of cholera had occurred at Resht, Meshed, and Astrabad.

From this rapid survey it will be seen that cholera has spread over a very large portion of the Persian kingdom. It is, or has been, present at Meshed in the north-east, at Tehran and Resht in the north-west, and at Shiraz and near Bushire in the south-west.

The fears expressed in some of my earlier letters that the infection would spread to Meshed and the shores of the Caspian have thus been realised but fortunately it does not seem as yet to have extended across the Perso-Russian frontier to Transcaspia; though, as stated at the beginning of this letter a single case has been reported from Baku, on the Caucasian shores of the Caspian Sea. That case was reported by the Governor of Baku on August 4th (July 22nd, Old Style); it was then spoken of as a case of cholera, without any qualifying adjective. The patient recovered and it has since been spoken of as a "suspected" case of cholera. The Russian authorities declare officially that no other case of the disease has occurred in any part of Russia. Owing to the occurrence of this case Turkey imposed a "medical visit" on arrivals from Batum, although no disease existed there, and this port is quite 500 miles from Baku and separated from it by the whole width of the Caucasus. The measure was, however, suppressed a week later.

While the above has been the course of the epidemic in a northerly direction, it has at the same time been spreading southwards and south-westwards from Basra and the Shatt-el-Arab to the Arabian shores of the Persian Gulf and to that little known inland province of Arabia, the Nejd. It will be recalled that by the end of June cholera had appeared at Katif and Dekin; at Darein and Narvet, two villages in the Katif district; and in the province of Katar. No further news was received from here until July 29th, when it was reported from Basra that 11 cases of cholera and 23 deaths had occurred in the villages of Redarin and Naren in the *sanjak* of Nejd and that the disease had appeared at Ajir on the coast. On August 3rd a delayed telegram from Basra gave statistics showing that a very large number of places in the inland province of Nejd and the coast province of El Hasa had been invaded by the disease and that in many it had caused a high mortality. The following are the figures given in this telegram, but it should be added that most of the names mentioned cannot be identified on the best maps of these regions:—

		Cases.	Deaths.
At Tarvet	from June 7th to June 14th	126 ...	122
,, Redarin	,, ,, 7th ,, ,, 14th	34 ...	33
,, Zor	,, ,, 9th ,, ,, 11th	3 ...	2
,, Senayis	,, 11th	2 ...	1
,, Keden	,, 14th	2 ...	2
,, Katif	from ,, 11th ,, ,, 15th	8 ...	6
,, Katif, Tarvet, and Naren ...	,, ,, 3rd to June 9th	157 ...	136
,, Sufouf, Kout, Reffea, and Naatil	,, ,, 16th ,, ,, 20th	30 ...	30
	,, ,, 21st ,, ,, 25th	27 ...	27
	,, ,, 26th ,, July 3rd	25 ...	25
	,, July 4th ,, ,, 9th	68 ...	68
	,, ,, 10th ,, ,, 16th	25 ...	25
,, Mirez, Onyoun, and Jaffer ...	,, ,, 4th ,, ,, 9th	120 ...	113
,, Jaffer	,, ,, 10th ,, ,, 16th	2 ...	4
,, Edjir (? Ajir) ...	June 13th	8 ...	7

Constantinople, Sept. 3rd.

Looking Back.

FROM

THE LANCET, *SATURDAY*, SEPT. 23, 1826.

[*From our Correspondent.*]

LETTER FROM LEYDEN.

Magni nominis umbra. LUCAN.

The annual expenses of the student at Leyden are high. I was informed, by one of them, that it requires economy to come through the year with 800 guldens, about 74*l.*—a much larger sum than would be necessary in any other than an university town. In the Peterschurch are two monuments which no medical man would omit to see; the one is erected to the memory of Boerrhaave and the other to Camper. Boerrhaave's is an urn of white, placed on a pedestal of black marble: on the pedestal hangs a medallion of white marble, with the [illegible] veri simplex," and in front is the d[illegible] Boerrhavii, Genio Sacrum, natus d.31 Dec. 1668, Denatus d.23 Sep. 1738. The urn is entwined by a wreath of heads, in bas relief, which gives the whole a too overloaded appearance. Camper's monument is simple and neat; his bust in white marble, *à l'antique*, is placed on a pedestal of black; on the front of which is this inscription:—"Peterus Camper," geboren te Leyden, den 11 May, 1722, overleden den 7 April 1789. This bust is said to be a striking likeness of Camper; it was sculptured from his celebrated portrait by Runbard Vinkelis. Camper, although very much respected in Holland, was a very vain man, but his arrogance was almost insufferable after he became a member of the States' Assembly. It used to be a favourite expression with him when pointing out anything he supposed new, "people will always say, that Camper observed this." Boerrhaave was certainly a very rich man, but he did not gain all his wealth by physic; he partook of the commercial spirit of his countrymen, and was at one time a large speculator in wool. His favourite residence was at Lond, just a short distance from Leyden, which he purchased of an Englishman; it was here that he spent so much time in the cultivation of tulips. Brugmann, one of the Professors, is in possession of many of the letters of Boerrhaave; among others is one to a student, who aped Boerrhaave in his slovenly manner of dress. The old gentleman did not like to be mimicked, so he told him, "that although slovenness might become an old man, it was not fitted for a youngling." He was very avaricious, and old Gaubius was still more so; neither of them would give their advice to persons not well known without first having the fees. A nobleman of Mecklenburgh requested Boerrhaave's advice by letter, respecting his wife; he wrote him twice but got no answer. He sent him a third letter, with 100 ducats, and Boerrhaave, in return, told him that his wife must ride. Now as the Mecklenburghers have very fine horses, they understand by riding, exercise *à cheval;* the noble lady was put on the back of a fine roadster, and in a short time was jolted to death. The husband was very wroth, and wrote Boerrhaave a furious letter, but the old physician sent word, that by riding, in Holland people meant sailing on a canal. He had forgotten, however, that there were no canals in Mecklenburgh.[1]

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 8464 births and 4989 deaths were registered during the week ending Sept. 17th. The annual rate of mortality i[illegible] d been *20·5, 18·2, and 17·5 per 1000* [illegible] weeks, further declined last week to 1[illegible] lon the death-rate was 15·3 per 1000, while it averaged 17·8 per 1000 in the 75 other large towns. The lowest death-rates in these towns were 6·1 in Handsworth (Staffs.), 6·7 in East Ham, 7·1 in Hastings, 8·9 in Walthamstow, 9·0 in Burton-on-Trent, 9·6 in Reading, [illegible] 10·3 in Smethwick, and 10·4 in [illegible]

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[1] An excerpt only has been transcribed.

highest rates were 24·0 in Walsall, 24·7 in Stockport, 24·8 in Warrington, 25·1 in Hull, 25·5 in Sunderland, 26·1 in Hanley, 27·8 in Salford, and 31·6 in Wigan. The 4989 deaths in these towns last week included 1192 which were referred to the principal infectious diseases, against 2291, 1636, and 1512 in the three preceding weeks; of these 1192 deaths, 949 resulted from diarrhœa, 73 from whooping-cough, 48 from diphtheria, 45 from measles, 39 from "fever" (principally enteric), 33 from scarlet fever, and five from small-pox. No death from any of these diseases occurred last week in King's Norton; among the other towns they caused the lowest death-rates in East Ham, Hastings, Bournemouth, Reading, Handsworth (Staffs.), Burton-on-Trent, Huddersfield, South Shields, and Cardiff; and the highest rates in Hanley, Walsall, Wigan, Warrington, Burnley, Preston, Hull, Sunderland, and Gateshead. The greatest proportional mortality from measles occurred in Walsall, Bootle, and Salford; from diphtheria in Hanley; from whooping-cough in Great Yarmouth, Bristol, Wigan, and Barrow-in-Furness; from "fever" in Hull; and from diarrhœa in Ipswich, Hanley, Wigan, Warrington, Burnley, Hull, Sunderland, and Gateshead. The mortality from scarlet fever showed no marked excess in any of the large towns. Three fatal cases of small-pox were recorded in Oldham, one in Preston, and one in Gateshead, but none in any other of the 76 large towns. The number of small-pox cases remaining under treatment in the Metropolitan Asylums Hospitals on Saturday, Sept. 17th, was five, against 13, nine, and eight on the three preceding Saturdays; one new case was admitted during the week, against none, two, and two in the three preceding weeks. The number of scarlet fever patients in these hospitals and in the London Fever Hospital, which had been 1781, 1820, and 1816 at the end of the three preceding weeks, had risen again to 1929 at the end of last week; 340 new cases were admitted during the week, against 263, 266, and 234 in the three preceding weeks. The deaths in London referred to pneumonia and diseases of the respiratory organs, which had been 101, 108, and 129 in the three preceding weeks, further rose to 141 last week, and were 12 in excess of the number in the corresponding period of last year. The causes of 49, or 1·0 per cent., of the deaths in the 76 towns were not certified either by a registered medical practitioner or by a coroner.
All the causes of death w
Bristol, Nottingham, Salf
castle-on-Tyne, and in 43
proportions of uncertified
ham, Liverpool, Bootle,
in-Furness, Rotherham, South Shields, and Gateshead.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been 16·2, 16·0, and 15·7, per 1000 in the three preceding weeks, rose again to 16·5 per 1000 during the week ending Sept. 17th, but was 0·5 per 1000 below the mean rate during the same period in the 76 large English towns. The rates in the eight Scotch towns ranged from 13·0 in Paisley and 14·3 in Aberdeen to 17·8 in Glasgow and 21·5 in Perth. The 547 deaths in these towns last week included 69 which were referred to diarrhœa, 13 to whooping-cough, eight to "fever," seven to diphtheria, three to measles, two to scarlet fever, and one to small-pox. In all, 103 deaths resulted from these principal infectious diseases last week, against 97, 100, and 86 in the three preceding weeks. These 103 deaths were equal to an annual rate of 3·1 per 1000, which was 1·0 per 1000 below the mean rate last week from the same diseases in the 76 large English towns. The fatal cases of diarrhœa, which had been 56, 58, and 52 in the three preceding weeks, rose again last week to 69, of which 42 occurred in Glasgow, nine in Dundee, four in Edinburgh, four in Aberdeen, four in Paisley, three in Leith, and two in Greenock. The deaths from whooping-cough, which had been 24, 26, and 17 in the three preceding weeks, further declined to 13 last week, and included six in Glasgow and four in Edinburgh. The fatal cases of "fever," which had been six and five in the two preceding weeks, rose again last week to eight, of which two were registered in Glasgow, two in Dundee, and two in Greenock. The deaths from diphtheria, which had been one, four, and five in the three preceding weeks, further rose to seven last week, and included two in Glasgow, two in Edinburgh, and two in Greenock. The three fatal cases of measles showed a decline of two from the number in the preceding week, and included two in Glasgow, where the death from small-pox also was recorded. The two fatal cases of scarlet fever corresponded with the number in the preceding week and both occurred in Aberdeen. The deaths referred to diseases of the respiratory organs in these towns, which had been 55, 53, and 58 in the three preceding weeks, declined again to 55 last week and were 16 below the number in the corresponding period of last year. The causes of 17, or more than 3 per cent., of the deaths registered in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 23·5, 19·9, and 20·8 per 1000 in the three preceding weeks, declined again last week to 16·8 per 1000. During the past four weeks the death-rate has averaged 20·3 per 1000, the rates during the same period being 16 5 in London and 14·5 in Edinburgh. The 122 deaths of persons belonging to Dublin registered during the week under notice showed a decline of 29 from the number in the preceding week and included 17 which were referred to the principal infectious diseases, against 49, 29, and 32 in the three preceding weeks; of these, 14 resulted from diarrhœa, two from "fever," and one from diphtheria, but not any from small-pox, from measles, from scarlet fever, or from whooping-cough. These 17 deaths were equal to an annual rate of 2·3 per 1000, the death-rates last week from the principal infectious diseases being 2·7 in London and 1·7 in Edinburgh. The fatal cases of diarrhœa, which had been 26 in each of the two preceding weeks, declined last week to 14. The 122 deaths in Dublin last week included 43 among children under one year of age and 20 among persons aged 60 years and upwards; the deaths both of infants and of elderly persons showed a considerable decline from the respective numbers registered in the preceding week. Four inquest cases and two deaths from violence were recorded; and 45, or more than a third, of the deaths occurred in public institutions. The causes of two, or nearly 2 per cent., of the deaths registered in Dublin last week were not certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Fleet Surgeons: J. C. Ferguson to the *Formidable*, on recommissioning; W. Bowden, D.S.O., to the *Boscawen*: and F. A. Brice to the *Revenge*. Staff Surgeons: P. H. Boyden to the *Prometheus*, on commissioning; T. W. Philip to the *Excellent*; and G. A. S. Bell to the *Breton*. Surgeons: P. L. Crosbie to the *Formidable*; R. M. Richards to the *Vulcan*; and J. C. Rowan to the *Fire Queen*.

Inspector-General of Hospitals and Fleets Duncan Hilston, C.B. (retired), has been appointed Honorary Physician to His Majesty, in place of Inspector-General of Hospitals and Fleets Dugald McEwan, deceased.

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel F. B. Maclean joins at Woolwich. Major C. A. Lane is held in readiness to embark for Ceylon. Captain J. L. Jones is held in readiness for service in Ceylon. Captain S. W. Sweetnam proceeds from Colchester to Weedon for duty and assumes medical charge of the troops and Station Hospital. Lieutenant F. M. M. Ommanney is appointed Medical Officer, 6th (Somaliland) Battalion the King's African Rifles. Major J. Fayrer is to be appointed Medical Officer of the Duke of York's Royal Military School, Chelsea.

Lieutenant D. D. Paton, from Seconded List, to be Lieutenant (dated Sept 1st, 1904).

VOLUNTEER CORPS.

olunteer Battalion the
J. P. Atkinson to be
d Sept. 17th, 1904).

1st Volunteer Battalion the Gordon Highlanders: The undermentioned Surgeon-Captains to be Surgeon-Majors:—G. M. Edmond (dated Sept. 17th, 1904) and G. Williamson (dated Sept. 17th, 1904).

The Tibet Expedition and Lhasa Treaty.

Colonel Younghusband's difficult mission, which called for the exercise of no little diplomatic skill, judgment, and courage, has been admirably conducted to a successful issue. The expedition has been of a very interesting and novel, but nevertheless of a very trying, character owing to the geographical obstacles that had to be overcome and the diversities of climate that had to be encountered. The military force on the march to Lhasa suffered to some extent from dysentery, hill diarrhœa, and sickness, and the transport difficulties at the altitudes which it traversed were immense, entailing very arduous work on the army medical, sick transport, and hospital services. The *Journal of the Royal Army Medical Corps* for the present month contains a short but excellent article by Major A. R. Aldridge, R.A.M.C., on the subject.

The date of the departure of the British force for India has been officially and definitely fixed for Sept. 23rd. Snow has already fallen on all the passes on the road to Gyang-tse, as well as at Gyang-tse itself. The temperature along the shores of Lake Palti is 12° lower than it is at Lhasa. The force has been able to purchase locally a certain number of blankets but the men are without fur coats and other articles of clothing which were found essential last winter. Store depôts have been erected at various points along the route to be taken by the mission on its return march. The number of native followers accompanying the troops on such occasions is always relatively very large.

The late Sir William Flower.

It is not perhaps generally known that the late Sir William Flower served as an army surgeon with the 63rd Regiment during the Crimean war where he and his colleagues regularly and successfully administered chloroform in their surgical operations despite the warning contained in an official memorandum issued by Sir John Hall, the medical chief of the army in the field, at the beginning of that war. Army medical officers happily did not share the views of their chief and used this anæsthetic with the best results, but chloroform was not at the time of the Crimean war so generally known—at any rate, in the experience of war surgery.

Recreation Grounds for Soldiers and their Children.

We understand that the Army Council has under consideration the provision of recreation grounds for soldiers at barracks and other quarters where such provision does not already exist and a general inquiry is being made into the matter. While on this subject might it not be well for the Army Council to consider also the expediency of providing something in the shape of a playground for the children of a big barrack population instead of allowing them to wander about indiscriminately in the barrack yards in the vicinity of surface drains and gratings into which they may be often throwing stones and dirt by way of pastime?

The War in the Far East.

After a comparatively short lull following a period of almost continuous hard fighting which made rest on the part of the exhausted belligerents absolutely essential, but during which both sides have been heavily reinforced, active operations have again recommenced. A big and decisive battle somewhere in the vicinity of Mukden is fully anticipated to occur shortly. In the rush of events there has been neither time nor opportunity to do more than roughly estimate the casualties and losses. We have learned little or nothing of the medical aspects of the campaign nor are we likely to do so in present circumstances. From all we read and hear a very large number of Russian wounded (in addition to those at Mukden) have been congregated in Harbin; all the buildings are occupied as hospitals and the town has, in fact, become a vast hospital. The Russian headquarter staff admit that their losses from August 26th to Sept. 8th before Liaoyang were two generals, 256 officers, 21,809 soldiers killed, wounded, or missing, and 133 guns. According to a telegram from St. Petersburg, published in the *Echo de Paris*, there are over 35,000 wounded at Harbin under treatment. *If* this be the case it is no wonder that the town is represented as being one vast hospital. It is perplexing to form any idea of how this multitude of patients are fed—to say nothing of their being treated. The weakness of the Japanese in cavalry to follow up their enemy in the retreat from Liaoyang no doubt saved General Kuropatkin's army from more disastrous losses. In addition to the exhaustion following the marches and battles both the Russian and Japanese armies suffered from a failure in their food-supplies after Liaoyang—a greater difficulty to be surmounted in the case of the Russians on account of their longer distance from their base and their dependence on a line of railway, whereas the latter, having command of the sea, are much nearer home and can always make use of any available rivers and waterways. The difficulties in the way of transporting, accommodating, and feeding the sick and wounded must have been well-nigh insurmountable in the circumstances. With regard to the stores of all kinds captured at Liaoyang there is an extraordinary and irreconcileable difference between the Russian and Japanese estimates, but the latter are corroborated by lists of the actual numbers alleged to have been captured. It is needless to add that the supplies and feeding of a force and of its hospital population will greatly turn on this point. Port Arthur still holds out and the feeling of the besieged and besiegers is apparently daily growing worse, but we know little or nothing of the number of the sick and the wounded in that garrison or of their sufferings beyond what we may reasonably conjecture to be the case. To add to the internal troubles and anxieties of the Russian Government at the present time the recent appearance of cholera in the chief towns of the Russian Transcaspian district, whence it is feared that it may be introduced into Russia proper by way of the Central Asian Railway and the Volga, must not be lost sight of. Judging by previous experience the appearance of this disease, possibly in epidemic form, may probably be anticipated next spring and summer.

The Russian Viceroy has decorated four medical officers for having carried wounded from the fighting line under a fire of shrapnel in which two of them were themselves wounded. He said to them: "In the name of His Majesty the Czar I award you a sign of military distinction and thank you for your honourable deeds. Your services are as great and honourable as though done as soldiers. A timely assistance in the firing line enables many of our braves to return the sooner to the defence of the Faith, the Czar, and the Fatherland."

Correspondence.

"*Audi alteram partem.*"

HOT WEATHER AND FOOD PRESERVATIVES.

To the Editors of The Lancet.

Sirs,—The question raised in my letter of August 21st cannot be dismissed so lightly as Dr. A. S. F. Grünbaum seems to think. Those who like myself have had a considerable experience of out-patient practice in large cities know well that the children of the very poor are largely fed on other things than milk, that milk is often beyond the reach of their parents' means, and that, as the mothers say, "they get a bit of anything that's going." Whether milk was ever much preservatised in Liverpool or not does not affect my argument, for the mortality from infantile diarrhœa in Liverpool has always been high though it has seldom approached the figure recorded this year. But we do know that there have been prosecutions in Liverpool for boric acid in margarine and in cream, and my point is that if the dealers had not *had the fear of* the inspector before their eyes they would have used some preservative in milk and other articles during the period of excessive heat, and that had they done so the rapid putrefaction of the food and the consequent high mortality from infantile diarrhœa might have been to some extent, at least, prevented. Dr. Grünbaum seems rather shocked at my presuming to hold an opinion at variance with the recommendations of the Departmental Committee on Preservatives in Foods, but I plead in extenuation that most of those medical witnesses who were actually concerned with practice among the poor in large cities were by no means inclined to go the lengths advocated by the committee, that opinions expressed by a committee three years ago are not necessarily binding in the light of subsequent experience, and that the Government which appointed the committee attaches so little importance to its recommendations that, although they were made three years ago, no attempt has been made to enforce them by legislation.

In response to my invitation to bring forward a single instance of injury from the reasonable use of boric acid or salicylic acid as a preservative in food Dr. Grünbaum refers me to a case quoted by Dr. E. W. Hope in his evidence before the Food Preservatives Committee. If Dr. Grünbaum considers this case convincing I can only explain it by the readiness with which the scientific mind can be deceived in the face of matters outside the laboratory. At the risk of being tedious I will briefly relate the case. Dr. Hope told the committee (Answers 6841, 6910-12) that a lady complained to him that she had made arrangements with her milk dealer to give him twice the amount he asked upon the condition that he should send her nothing but pure milk. One day her infant was taken violently ill. Nothing had been given it but under her own supervision. She at once went to the milkman and asked what he had been sending and he admitted that he had put some boric acid in the milk on that one day but on no other. Now it is apparent that the case is only "quoted," as Dr. Grünbaum happily expresses it, that it was only hearsay evidence, and that the statement that boric acid was only used on that one occasion was twice hearsay, and that the veracity of its alleged author was not above suspicion. But taking the story as it stands we are not told what were the symptoms in the child, what other food it may have had, nor whether it got well when other milk was supplied. Further, if the boric acid was the cause of the violent illness in the child one would expect to hear of similar cases in other children receiving milk from the same source and to hear of more or less continuous ill-health in children whose parents had made no special arrangements *with regard to the quality of the milk supplied. This* case will certainly not carry conviction to the "unprejudiced observer" and Dr. Grünbaum has not strengthened his case by referring to it. The researches of the Reichs-Gesundheitsamt by no means settle the question and, *pace* Dr. Grünbaum, the conclusions drawn from them have been effectually disproved by Liebreich. The experiments of Tunnicliffe and Rosenheim also are as strong in favour of the innocuousness of boric acid to children as any evidence alleged on the other side.

The distinction Dr. Grünbaum draws between decomposition and putrefaction in food is a purely artificial one. There is no reason to suppose that odourless, almost tasteless, bodies such as boric acid can allow decomposition to take place and at the same time destroy the signs by which it is made evident to the senses. But it is hardly necessary for me to insist on this point, for the medical officer of health of Liverpool has stated[1] that diarrhœa occurs at a time when food becomes rapidly *putrescent.*

The alleged drawback of preservatives that they open the way for dirty and fraudulent practices and make it difficult to teach care and cleanliness to the poor can have but little weight if it be true, as I maintain, that they keep food in a condition fit for consumption which would otherwise have to be thrown away. In a community in which probably 25 per cent. of the people are too poor to purchase enough food to maintain themselves in full health the importance of avoiding all unnecessary waste is obvious. Even if we grant all that has been alleged against preservatives their strongest opponents have not attempted to show that the use of them has ever raised the death-rate to 39 per 1000. I do not hold up the use of preservatives in food as a counsel of perfection. If our slums were abolished and our people were all wise and prosperous there would be less use for them, though I believe that in the case of temperance beverages they will always be needed to supply the place of the alcohol which keeps intoxicating drinks from going bad. What I do maintain is what I stated in my letter of August 21st, a statement which Dr. Grünbaum has not attempted to controvert—namely, that in the conditions under which the poor live in our large cities their food is certain to undergo rapid decomposition in hot weather unless preservatives are employed.

I am, Sirs, yours faithfully,

THC [illegible]

Liverpool, Sept. 10th, 1904.

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[1] THE LANCET, August 27th, 1904, p. 642.

TO MEDICAL FREEMASONS.

To the Editors of THE LANCET.

SIRS,—May I through the medium of THE LANCET once more appeal to medical Freemasons for their votes and influence on behalf of those candidates for the Masonic charitable institutions who are children of medical men and consequently have special claim on your readers. At the forthcoming election of the Royal Masonic Institution for Boys the "medical candidates" are: D. C. W. Wingrave, aged ten years, son of Dr. V. H. W. Wingrave of St. Albans; B. O. I. Russell, aged eight years, son of the late C. H. Russell, medical officer of health of Southampton; and H. J. Castles, aged nine years, son of the late Mr. K. Castles of Harrington, Cumberland. The "medical candidates" for the Royal Masonic Institution for Girls are: I. M. Sewart, aged eight years, daughter of the late Mr. J. H. Sewart of Lostwithiel; A. M. D'Arcy Sugden, aged ten years, daughter of the late Mr. D'Arcy Sugden of Buckfastleigh, South Devon; and L. Fausset, aged ten years, daughter of the late Mr. J. D. Fausset of Fleetwood. Votes for any of the above will be thankfully received by myself or our treasurer, Dr. J. W. H. Eyre, Wandle House, Wandle-road, S.W.

I am, Sirs, yours faithfully,

HAROLD S. SINGTON,

Secretary, St. Luke's Medical Lodge of Instruction.

44, St. Mary's Mansions, W., Sept. 16th, 1904.

THE COMPARATIVE INTELLECTUAL POWERS OF THE TWO SEXES.

To the Editors of THE LANCET.

SIRS,—In THE LANCET of Sept. 10th, p. 777, you did me the honour to mention my paper read at the meeting of the British Association and dealing with the progress of schoolboys and schoolgirls. I found by my observations that in elementary schools the balance of proficiency, even in arithmetic, inclines to the side of the girls. In this respect you express the opinion that "the intellectual superiority of girls ...... is so unexpected and so entirely opposed to the teaching of the world's history that we naturally turn to other possible sources of explanation. ...... The vulnerable features of these statistics ...... is that they refer to a period of life which both in boys and girls is subject to disturbances, sexual and otherwise. These disturbances ...... may offer some explanation of the fact that nearly the whole work of human progress can be traced to the maturer activities of the male and not of the female intellect." As my own opinion coincides nearly entirely with yours it seems that you had before you only a short excerpt of my paper which in reality puts forth the same views that you expressed. I enclose the official abstract of my paper by which you may convince yourself that what I suggested is the following: In childhood girls learn better than boys, probably in consequence of the quicker physical development of the female sex, but since not only in sciences but also in poetry and (with exception of the stage) in arts, the great work of human progress has been accomplished by the male sex, one is obliged to suppose that with the age of ripening the female intellect develops itself more slowly than the male one.—I am, Sirs, yours faithfully,

Dr. JOSEPH DE KÖRÖSY,

Budapest, Sept. 19th, 1904. Director of Municipal Statistics.

⁂ We regret that imperfect information should have led us to imply that Dr. de Körösy had not appreciated the difficulty to which we referred, but we are happy to see from his letter and from the official report which he incloses that his opinion coincides with our own.—ED. L.

OBTURATOR HERNIA FOLLOWING MUSCULAR EFFORT.

To the Editors of THE LANCET.

SIRS,—I am sending notes of the following case on account of its rarity.

[illegible] years, when at work [illegible] pain in the abdomen. [illegible] when he walked home and was seen by a colleague; he complained of great pain. Magnesium sulphate and calomel were administered, with the only result of causing vomiting. The vomiting continued the whole of the next day, notwithstanding that morphine was administered hypodermically. On the 29th at 11 A.M. I saw the patient. He was in great pain and begging for relief; he was cold and almost pulseless. He was removed to the West Cornwall Miners' and Women's Hospital, Redruth. Strychnine was given and injections of brandy and coffee also to revive him. At 2 P.M., after lavage of the stomach, Dr. W. Blackwood administered ether and with the assistance of Dr. F. Hichens I opened the abdomen to find a hernial sac free in the abdomen. On nicking the neck several inches of dark maroon-coloured gut were liberated and some dark fluid was evacuated from the sac. The patient did not rally from the shock and died at 9 P.M., notwithstanding stimulants, &c., to reduce the shock. The case appeared to be the reduction *en masse* (spontaneously) of an obturator hernia. On passing the finger into the empty sac it went up to, but not through, the obturator foramen and the only explanation I can give is that the great peristalsis caused by the purgatives must have given rise to the condition. I am, Sirs, yours faithfully,

Camborne, Sept. 13th, 1904. JOHN H. TONKING.

DEATHS UNDER CHLOROFORM AND THEIR PREVENTION.

To the Editors of THE LANCET.

SIRS,—There are two points in connexion with the death under chloroform which you record in your issue of Sept. 17th (p. 841) that I think are worthy of comment. The first is the fact that the patient died within seven minutes of the commencement of the inhalation, and the second that he died immediately after being lifted on to the operating table from the bed, or lorry? With regard to the first point Dr. F. W. Hewitt on p. 342 of his most admirable work on "Anæsthetics" draws attention to the fact that a large proportion of deaths occurring under chloroform take place within a few minutes of the time that the administration is started and he instances 75 fatalities in 68 of which the patient died within the first 15 minutes. I have before me at the moment of writing details of other 63 deaths under chloroform, all of which occurred during one year in the United Kingdom, and in 60 of these the patient died within a few minutes of the commencement of the administration of the chloroform, several after a few inspirations. With these figures facing me and with my own personal experience of practical anæsthetics I find it impossible not to differ from Professor A. D. Waller[1] in the view which he has expressed that deaths under chloroform are generally caused by overdose. I am disposed to think that overdose—that is, imbibition of an excessive and toxic amount of chloroform—is a comparatively rare cause of death and that when it occurs the condition produced by this overdosage is often a remediable one if proper measures are promptly adopted.

The most frequent and usual cause of death under chloroform—and no one with his eyes open can question it—is syncope arising from two ordinary physiological actions of chloroform on the human economy which are: (1) to produce vagus excitability (Embley); and (2) to abolish the vascular mechanism which compensates for the mechanical effect of gravity (Leonard Hill). When death occurs at or immediately after the moment of lifting a patient from the bed to the operating table during chloroform anæsthesia, as in the case you record, this latter action will in many cases probably be the causative factor and no overdose is necessary. When, on the other hand, death occurs before complete unconsciousness from "fright syncope" (of which numerous instances are recorded) and in cases where the first incision is made during imperfect anæsthesia excitation of the vagus is probably the predominating factor. Further, when a patient is attacked by syncope, whether he has been chloroformed or not, restorative measures are seldom of any avail. On the other hand, most anæsthetists, especially those who have to do with the instruction of students or post-graduates, will be able to recall cases where the patient "had a little too much," stopped breathing and turned blue, or even pale, but active restorative measures being applied, no great difficulty was found in getting rid of the excessive dose or, at any rate, restoring animation.

Personally I have never seen a case of chloroform syncope but two cases occurred recently in the hands of friends of mine. I am quite confident that in neither of these instances was any overdose of chloroform administered and such deaths cannot be avoided by the use of Dubois's or Harcourt's dosimetrical apparatus. However interesting the investigations of the British Medical Committee may be from the physiological side one is somewhat at a loss to see what practical outcome of value we can expect to result from them. The chief advantage claimed for chloroform as opposed to ether in the past has been its handiness and if we handicap it with an apparatus of an extremely fragile nature, like Harcourt's, or with one weighing a couple of stones, like Dubois's, then surely one of the strongest claims of this anæsthetic to favour has vanished. Moreover, it is impossible to suppose, even were the fact absolutely established that overdose with either of these ingenious apparatus was impossible, that the country practitioner or the metropolitan anæsthetist would go to his cases with one of these apparatus in his bag and use it as a matter of routine. Time and space have a lot to do with practical surgery and the hospital theatre cannot be turned into a laboratory nor the medical man into a beast of burden. In the case to which my friend, Dr. W. J. McCardie, referred at Oxford[2] 15 minutes were required to "dull or abolish the lid reflex with a 1 per cent. vapour and 12½ minutes with a 1½ per cent. vapour." Where is the surgeon who will stand by quietly waiting during these periods on a busy hospital "field day" in the year 1904? Safety in the administration of chloroform and a diminished death-rate under anæsthetics are not to be found in the employment of dosimetrical apparatus, "blow-through" or otherwise. In my humble opinion it will be found in quite another way and that is in the rapid induction of anæsthesia in all possible cases by means of a different agent from chloroform—viz., ethyl chloride, which in certain cases can be followed with advantage by ether. When once unconsciousness is induced and anæsthesia present by means of this agent or these agents the dulled sensorium and stimulated cardio-vascular system may be subjected to the excitant and depressant action of chloroform, on them respectively, not with absolute freedom from risk of overdose it is true, but with the comforting knowledge that the patients will not suddenly "turn pale and die" from syncope "after the first few breaths of the anæsthetic." Risk of overdose during the operation may surely be eliminated if a reasonably skilful and careful administrator be employed.

It may be considered bold for me to make this statement but I do so on the strength of a personal experience of considerably over a thousand cases of ethyl chloride narcosis and ethyl chloride sequences during the past year and I believe my favourable opinion of ethyl-chloride-ether-chloroform sequence is shared by Dr. McCardie whose experience with the first-named anæsthetic is unique. During this time I have had all classes of patients in my hands, from the hysterical nervous female to the whisky saturated alcoholic male, and all have been negotiated with ease—at any rate, with ease as regards the first 15 minutes. The most striking thing is the complete absence of anything but quite momentary struggling in alcoholic patients of the worst type. Before they have time to get violent voluntary movement and involuntary "excitation movements" are paralysed and they settle down into an even, if at times somewhat stertorous and noisy, anæsthesia. With ethyl chloride properly administered unconsciousness is obtained in from 15 to 20 seconds, anæsthesia in less than a minute, and profound ethyl-chloride-ether anæsthesia in two and a half minutes. Ethyl chloride as an "introducer" to chloroform anæsthesia is certainly worthy of the attention of the profession. The progress of this anæsthetic during the past two years has been remarkable and will, I sincerely hope, continue. Were it generally realised that practically nothing but a Clover's inhaler or an Ormsby is required to administer it satisfactorily I think it would be more widely used *per se* than it is, but the continual "hatching" of new "special" inhalers for the drug, which are turned out at the rate of rather over one a week, tends to create the impression that the administration is a difficult matter and a very special apparatus necessary, adding to the bulk of the practitioner's armamentarium. When every medical man gets to know that the Clover which he already possesses, or ought to possess, can for a most trifling outlay be adapted for an ethyl-chloride-ether inhaler by any instrument maker he will be more likely to employ ethyl chloride for brief operations where the use of chloroform is unnecessary, if not quite unjustifiable. In this way, eventually, I think, will the present discreditable death-rate under anæsthetics, to which Professor Waller has so eloquently drawn attention, be very sensibly reduced and painful incidents such as you have just recorded be avoided.

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[1] THE LANCET, Nov. 28th, 1903, p. 1481.

[2] THE LANCET, August 20th, 1904, p. 39.

I am, Sirs, yours faithfully,

Edinburgh, Sept. 17th, 1904. THOMAS D. LUKE.

PHIMOSIS AND HERNIA.

To the Editors of THE LANCET.

SIRS,—In connexion with the causal relation between phimosis and hernia raised by Dr. H. Lyon Smith in his letter in THE LANCET of Sept. 17th, p. 858, permit me to say that from my experience at the City of London Truss Society I can fully endorse Mr. E. M. Corner's belief that phimosis has but little force in producing a hernia. The essential causes of inguinal hernia in young infants, male or female, are a patent processus vaginalis and distension of the intestines with gas. The more a child cries or strains, provided there is no open peritoneal pouch, the less likely it is to develop a hernia, for the arching fibres of the internal oblique and the transversalis are thus strengthened and effectually close any weak spot there is. Distension is nearly always due to improper food. Severe phimosis is often seen without hernia. Hernia does not appear to be more than ordinarily frequent in boys with [illegible] in inducing descent of the bowel into a sac already in existence I am perfectly sure that circumcision will not of itself cure such a hernia, though, as Dr. Lyon Smith points out, the application of a truss with circumcision might. Careful attention to errors in diet and the application of a truss are much more likely to be the means whereby cure is effected. Circumcise those cases in which it is needful, but do not neglect proper treatment for the hernia by truss or operation.

I am, Sirs, yours faithfully,

Harley-street, W., Sept. 19th, 1904. W. MCADAM ECCLES.

THE TREATMENT OF HÆMORRHOIDS AND ALLIED CONDITIONS BY OSCILLATORY CURRENTS OF HIGH TENSION.

To the Editors of THE LANCET.

SIRS,—In THE LANCET of Sept. 10th, p. 793, Mr. P. Lockhart Mummery seems to assume that the method of treatment first described by Professor Doumer and adopted by myself with results as given in a recent paper is based upon nothing more solid than empirical grounds. I am bound to say that such a statement is entirely inaccurate and could not have been made by anyone who had taken the trouble to consult the literature of the subject. I may also remind him that the mode of treatment which he describes as "new" has been before the profession for seven years and has formed the subject of an already considerable number of papers in continental and American medical journals.

It is quite true that we do not know everything concerning the physiological action of these oscillatory currents; the same might be said with equal truth concerning a great many of the remedial agents in common use. I might even go further and declare that the employment even of empirical measures by trained observers may not be altogether unjustifiable. In the present instance, however, I have no such position to defend. The idea of applying high-tension currents to fissures and allied conditions is based on sound physiological and pathological knowledge. We know that these currents have the property of abolishing the excitability of sensory nerve endings and also of removing the conductivity of motor nerves. Without going any further into physiological questions we may find here ample justification for applying an agent possessing such powers to the treatment of sphincter fissure. There we find an exaggerated sensibility of the sensory nerve endings, together with spasm of the sphincter muscle fibres. On theoretical considerations, therefore, the application of high-tension oscillatory current is plainly indicated and in my opinion the clinical results obtained are as satisfactory as one could wish.

I quite agree with Mr. Mummery that the haphazard use of electricity as a remedial agent by those who are untrained in methods of accurate physiological observation is undesirable. It is true that a certain class of patients exists which revels in complicated and impressive instrumentation but such will not find their ideal in the consulting-room of anyone who has at heart the serious application of electro-therapeutic measures. Instrumentation may be necessarily complicated but this is a question which bothers the physician only and need in no way concern his patient.

I am, Sirs, yours faithfully,

Devonshire street, W., Sept. 20th, 1904. T. J. BOKENHAM.

AN EASY METHOD OF OBTAINING EXFLAGELLATION OF THE MALARIAL PARASITE.

To the Editors of THE LANCET.

SIRS,—Having till recently failed to get exflagellation in crescent infection I have lately used a method which has proved both simple and very efficacious. This consists in mounting a drop of blood of the usual size on a slide wetted with ordinary cold water held at an angle so that no excess remains. This is quite easily done by a brush or with the finger and the least possible quantity of water is sufficient. The blood is not otherwise "mixed" with water. The red blood corpuscles no longer show a tendency to form rouleaux and the process of exflagellation is the more easily observed. The red corpuscles do not undergo any notable alteration but the leucocytes become a good deal more refractive. [illegible] method of breathing on the [illegible] xflagellation in the first three [illegible]. the first case of tertian fever with gametes was also successful. Tertian fever is common enough here. Since writing the above I have to-day had a case of quartan fever with abundant rosettes in which well-marked exflagellation was seen.

I am, Sirs, yours faithfully,

J. CROPPER, M.D. Cantab.

Ramallah, Palestine, Sept. 7th, 1904.

BULLET WOUNDS OF THE BRAIN.

To the Editors of THE LANCET.

SIRS,—Referring to my paper on a case of the above in THE LANCET of Sept. 17th, p. 825, my attention has recently been called to a somewhat similar case published by Mr. A. E. Barker in THE LANCET of Dec. 2nd, 1899, p. 1508. In this case the bullet entered the hard palate and lodged "in the centre of the brain" one and three-quarter inches from the surface of the skull. Lateral and antero-posterior skiagraphs were taken and the bullet was successfully removed by Mr. Barker 69 days after the injury. I stated in my paper that I had not been able to find a case where the bullet had been removed from the depths of the brain on the results of x-ray localisation.

I am, Sirs, yours faithfully,

Cardiff, Sept. 21st, 1904. WILLIAM SHEEN.

TRAVELLING IN EGYPT.—Messrs. Thomas Cook and Son have just issued their new programme of arrangements for travelling in Egypt, by which it appears their steamers will commence to run between Cairo and the First Cataract in November and continue until the middle of March, with connecting steamers between the First and Second Cataract. A new and interesting feature is the arrangement of combined bookings by Messrs. Cook's steamers and the Egyptian and Soudan Railways, enabling tourists with only limited time at their disposal to make their visits to Upper Egypt more rapidly than can be done by using the steamers only. Tickets will be issued to Khartoum and Gondokoro. The facilities afforded to the travelling public for inspecting the wonderful remains of ancient civilisation which adorn the banks of the Nile are now greater than ever, and with luxurious hotels, not only at Cairo, but at Luxor and Assouan, there is every probability that Egypt, with its incomparable climate, during the coming winter will receive a larger share than ever of the health- and pleasure-seeking public.

MEDICAL NOTES FROM THE FAR EAST.

The following notes are from the pen of a special correspondent who has been making a tour round Korea, North China, and Japan. He visited Seoul, Chifu, and Tientsin and from this last city went to Peking, at which place the following notes commence.

Peking, July 20th.

A brief visit to Peking, three and a half hours up the line, has been of more general than medical interest. Here are legation guards of the eight nations, Russians and Japanese included, and in the British legation is the fine Chinese building used as a military hospital for the British guard, four of whom were in-patients and of no professional interest. Dr. G. D. Gray from Central Africa, as legation physician, has succeeded the late Dr. Wordsworth Poole, whose work in the siege and subsequent death from typhoid fever are recorded on one of the several pathetic and exceptionally well-written brass epitaphs in the legation chapel. Dr. G. E. Morrison, the *Times* correspondent, is of course one of the best known medical men in Peking and happens to be at home—an exception rather than the rule with him—but his narrative has mostly been non-medical and for his thrilling and varied medical experiences we must ask him to hurry up and to publish his Reminiscences himself. But thanks to him I have had the privilege of seeing and hearing of the excellent work being done by medical missions in the city. The Americans have a brand new hospital, up to date in all respects, but I have only had time in pelting rain to visit the hospital of the London Missionary Society, instituted in 1861 and now for four years past managed by Dr. T. Cochrane. In 1898 and 1899 as many as 30,000 visits were paid by out-patients each year to the hospital. Then came the Boxer outbreak. But last year confidence began to be restored and there were 20,000 attendances with 124 in-patients. It is a fine example of a struggle with adverse circumstances and, despite the drawbacks of extemporised buildings and half-trained assistants, the success of laparotomies, lithotomies, and other major operations without a single death is remarkable. Now Dr. Cochrane has made a bold move and is building a new hospital and medical school, complete with lecture rooms, laboratories, and residential rooms for Chinese students. The main block of this fine building is now nearly finished; the whole will cost 50,000 taels (£6000), towards which the Dowager Empress has made her first subscription to a foreign benevolent institution of 10,000 taels. It is noteworthy that the hospital has of late years been entirely self-supporting, local subscriptions making up the difference between the expenses and the receipts from patients, the latter being obliged, except in case of destitution, to pay two sens a visit to prevent the natural tendency of the Chinaman on seeing a drug-shop to feel ill or to lay in a store of medicines against the time when he may feel ill. The building of this new college, however, calls, of course, for funds, and few better objects of philanthropy could be devised, for it is only by educating the intelligent Chinese in a subject so obviously beneficial as European medical knowledge that we can hope to make them appreciate, respect, and hanker after friendship and intercourse with European nations. The only case of special interest that I saw was that of a court eunuch, admitted for some other complaint than that of cicatricial stricture or stone from which they usually suffer. Mutilated, of course without chloroform, at the age of 15 years in order that he might receive employment about the court and so obtain influence for his family, this man had the voice, the pubic hair, and the general secondary characteristics of a man, with a somewhat myxœdematous fulness of the skin, and his genitalia had been so completely removed as to leave only an opening to the urethra just below the pubes. The common results are a stricture so fine as to give rise to great difficulty in micturition and the finest thread-like stream, for which operation is often sought and carried out without great difficulty. A perineal urethrotomy is often the best form of treatment. Mention may also be made of a beggar-lad who was admitted for the loss of both feet from frost-bite and who was saved from death in the streets and the ravages of dogs by being admitted into hospital; the result being a couple of useful stumps.

Shanhaikwan, July 22nd.

A 12 hours' run brought me yesterday evening to this station, where the fortunate traveller may spend the night with the hospitable 30th Punjabis, and the unfortunate may with difficulty find a room in the hotel. It is another military menagerie, with the difference in the absence of the Russian detachment, whose officers were very popular with our Indian mess until they were withdrawn. Occasional brawls occur and only a few days ago a couple of Frenchmen and several Japanese lost their lives in such a quarrel. At Shanhaikwan the Great Wall of China, built in vain to keep out the Tartars and Mongols, ends in the sea, and now from the top of it may be seen a party of Sikhs practising flag-signalling. In 1900 its forts were dismantled and their modern guns were sent home to Europe by the Powers, who have now agreed to guard the line in sections. Two stations after leaving Taku are garrisoned by British detachments; the last few stations before arriving here are manned by Japanese. An hour back down the coast is Peitaiho, the fashionable watering-place of North China, and between that and here is the small port of Chingwangtoo, of considerable importance because it remains ice-free throughout the winter, whereas Taku is frozen up for three months. The 30th Punjabis here are between 700 and 800 strong. During their two years in the station 40 men have been invalided with tubercle. They are occupying the same barracks as were tenanted by the 4th Goorkhas who similarly were severely affected by tubercle until they were put into good barracks in India last year, since when they have been free. These barracks at Shanhaikwan are often two feet under water; even now the surface water is only three feet below the soil. The buildings are very unhealthy and rent is all the time being paid for them to the Chinese owner. A good site and a good supply of ready-made bricks are close at hand of which both Germans and French have readily availed themselves. Many memoranda have been sent in on the subject but still nothing has been done and the soldiers continue to be invalided from tubercle. It is hoped that the return of Colonel Macpherson from the front will be followed by improvement in all these serious defects, which otherwise would be wholly unpardonable and a national disgrace.

Niuchwang, July 25th.

Another 12 hours' run in a far less comfortable train brings me to Yingkau railway station on the right bank, or neutral side, of the Liao-ho; on the left is Yingkau, or the treaty port of Niuchwang, with 70,000 Chinese inhabitants and a foreign settlement administered by the Russians. Three miles up the river on the left bank is Russiatown; 30 miles up is old Niuchwang, conceded by the wily Chinese, who drew up the Treaty of Tientsin in 1867 and thought, rightly, that we did not know that the so-called port which they were throwing open to us was 30 miles up the river and of no use for our purposes. But might appears to be the chief form of right recognised by Europe in her sordid dealings of the last 60 years with China and so we have the prosperous port of Niuchwang at the mouth of the chief river of North China.

Plague is not infrequent here. Last year there were estimated to be 1000 cases between August and December; about 40 of the patients recovered in hospital. There were probably many more unreported cases, but those given were enough for the port to be declared infected. The English medical officer to the administration, Dr. C. C. de B. Daly, is at present away on leave, and his work is being done by a missionary of the Scotch Presbyterian Church, Dr. Bander, whom I found assisting Dr. Brown of Chang-tu-fu to remove a cataract. There appears to be little typhoid fever here but a good deal of tubercle, especially of the glands and the bones. The Red Cross hospital of 40 beds was founded in 1894 by subscriptions mainly from the wealthy Chinese of Shanghai, who subscribed $10,000 (£1000) in the first day and have sent generous subscriptions since for the medical and general relief of their poorer countrymen. The use of the hospital, which is well stocked in every respect, was offered to both Japanese and Russians, both of whom have refused all offers of help, and the hospital is therefore used as a general civil hospital for the poor of Niuchwang. There are no trained nurses.

There have recently been about 1500 Russian troops in and about this port but there appears at no time to have been any provision on a large scale for sick and wounded. A report was recently sent home by a correspondent that hundreds of Russians were lying here sick and wounded without any medical, nursing, or other attention and that the Russian authorities refused to allow even Dr Bander and others to give their services I can only imagine that either the correspondent was mis stating facts or else that a certain number of wounded may have been brought in here for a few hours and were awaiting removal by a hospital train A foreign military attaché, just down from Liaoyang, was giving me yesterday the results of his special inquiries into hospital arrangements, on which he has reported at length to his Government The dearth of medical arrangements on the Russian side appears to have been much exaggerated Their army medical service is limited in number and function; they supply, it appears, only the regimental medical officers and the staff of the bearer companies and officers attached to the personal staff of each general All the hospitals and hospital trains are supplied by the Red Cross which plays a rôle of even greater importance than the Red Cross of Japan Almost every provincial government in Russia and Siberia and many wealthy personages, both of royal blood and in the commercial world, undertake the complete equipment and support of a hospital train or hospital and so far as my informant, a layman, could judge they were all not only well but magnificently equipped The trains were furnished with swinging cots on springs, with baths, kitchens, and operating theatre and complete arrangements for a staff of four medical officers, so many nurses, and 36 attendants on each train Indeed, Dr Kanal, the extremely friendly and gentlemanly medical officer, ranking as Lieutenant-Colonel and attached to the administration here, talks with some contempt of the Red Cross superfluities, just as one heard similar complaints against some of the private hospitals in South Africa He speaks, naturally enough, with still greater fluency of the dangerous independence of the Red Cross from the Army Medical Service As with much else in the Russian system there is plenty of it and of the first quality, but it lacks organisation There can be no doubt that the only proper system is that of the Japanese Red Cross which coördinates all [illegible] working directly under the [illegible] ertaking being given that [illegible] be of the same kind only [illegible] Thus, the succour of sick and wounded is made essentially a second consideration to the primary interests of the campaign, that is of the State, and silly jealousies between private and regular medical supplies and aid are avoided. But, to return to the Russian system, there is no doubt that there is an abundant supply of well equipped hospital trains, dating back to the very opening of the Siberian line, when amongst the first appearances were a police wagon and a "sanitary wagon" painted in white with a Red Cross on it And it seems highly probable that any sick and wounded in or around Niuchwang may have depended on the arrival of a hospital train to treat them and to carry them up the line rather than that they should have been deliberately neglected The Russian administrator, M Victor Grosse, tells me himself that the wounded are taken to the junction at Tashichiao or to the base hospitals at Liaoyang and Kharbin, or beyond the border to Chita and Irkutsk, or finally to Moscow, their distributing centre, or to their sanatoriums in the Crimea St Petersburg and Moscow gave a million roubles each for this Red Cross work and included in its staff they have such well known men as Alexandrovsky, head of the Red Cross, and Professor Zoege von Manteuffel professor of surgery at Dorpat, who is now chief of the Red Cross at Tashichiao Amongst others whom I met at M Grosse's was Professor Vussakovitch, professor of bacteriology and pathology at Kieff who was recently working for three months with Haffkine at Parel in India and is now sent out specially to secure the troops against plague and cholera As he says, his position is likely to prove a sinecure, for there evidently is no very serious illness amongst the forces on either side, although it will be realised that the usual plague season here only begins in July or August and dies off in December, and winter again may produce another series of ailments It is interesting, by the way to hear that winter rather than stop the campaign, will prove of unquestionable advantage to the Japanese, for here, where the thermometer falls to 20° below zero, 50° of frost, the country is frozen so hard that the transport can travel freely without hindrance in any direction, a few cases only will occur of frostbite The river itself is always frozen and with care may provide an excellent surface for sleigh traffic Fortunately, these Russian officers are extraordinarily good linguists. Dr Kanal, whose native tongue is Finnish, speaks Russian, French, and English with about equal fluency "What," said the Swedish attache to a Russian cavalry officer, who had just been talking each of these languages and was now talking to a Spaniard, "you talk Spanish too?" "Yes, naturally enough," was the reply, "considering I'm a Spaniard" He was the fine spokesman and gentleman, Prince Jeamé de Bourbon, son of Don Carlos, now a familiar figure in this town But familiar he will be no longer, nor any Russian officer All day long, from 4 A M to 8 P M, on Saturday and Sunday we have been hearing the sound of guns and from the roof top through our glasses watching the shells burst on the hills a few miles south of Tashichiao, from 12 to 15 miles away Chinese reports tell us of casualties in thousands and still yesterday evening the important railway junction of Tashichiao remained in Russian hands But this morning we were awakened with the news that the Russians were at last evacuating the town in earnest and climbing to the roof tops we saw them march out along the street at our foot and away to Russiatown which at 9 o clock went up in flames, a vast cloud of smoke blotting out for us a quarter of the landscape A visit to Russiatown in the afternoon showed us the whole place gutted, not by fire, but by the Chinese, who were still digging away, naked or clothed only in a loin cloth, with unprecedented energy at the remaining coal-heaps, wrenching away doors and windows, and ripping off the roofs of galvanised iron Only the heaps of forage had been burnt and they were still smouldering on The houses represented purely and simply the downfall of Russia, the letting loose, as greyhounds from a leash, of the lowest class Chinese the Yellow Peril without a doubt, from all semblance of law and order At four o'clock the first Japanese scouts arrived, at nine there appeared a troop of 50, and feeling now the impossibility of getting within the Russian lines I am taking the next boat back to Chifu and Shanghai so as to be in time to visit the Japanese

PS *Nearing Shanghai, August 1st* —I have been hearing a good deal about Russian sick and wounded from refugees, 77 arrived on Friday at Chifu from Port Arthur, one recently from Liaoyang was on our boat from Niuchwang One well informed man of affairs from Kharbin is on board this boat, having left Mukden on Monday evening at 5 P M, at which time he is sure the Liaoyang line had not been cut, although he himself *came across to China and* down the Chinese railway from the up country terminus, Hsin min ting, 40 miles from Mukden Apparently there *are* military hospitals in the Russian army besides those under the Red Cross Society, as with us they are nursed by female nurses and are largely staffed by reserve medical men drawn from civil life, who have been excused military service in return for an unpaid liability to be called out in time of war This of course, tells heavily on many of them who have had to throw up their practices and have to support wife and family while only receiving 144 roubles (£14) a month less than half the pay of a civil surgeon in South Africa As with us the military hospitals, except for local private aid, have little beyond the necessaries laid down in regulations, while the Red Cross hospitals are equipped with lavish magnificence This gentleman has himself seen No 20 hospital train, and each is arranged to take some 200 lying-down patients, 400 in all as compared with the 100 that were carried by our five South African trains I am bound to say that with the picture of the latter still fresh in my mind I shall feel sceptical as to the possibility of any train having comfortable accommodation within manageable limits for so many patients until I have seen one myself But the evidence is certainly good The hospital accommodation at Kharbin—one of those extraordinary Russian cities of only four years' growth—is on a very large scale and 21 "barracks"—presumably pavilions—have recently been built for hospital work in addition to 400 for healthy troops My informant himself saw many trainfuls of wounded come in from Tashichiao which he says was only an artillery action From Kharbin the more slightly wounded and sick are shipped on specially fitted out barges up the Sungari River to Blagovestchensk, Nicholsk, Chita, Khabaroff or any other station on the Ussuri line which runs from Vladivostok to Khabaroff Chita especially is becoming a big centre for hospital work and many of the troops have already been able to get back *to the fighting* line. Their spirit is good and there is no doubt that the Russians, even those who are fairly disinterested and those who are opposed to the war, although expecting Port Arthur to fall within six weeks, are convinced that sooner or later Russia must win by force of numbers. With all deference to the *Times* critic there is no getting over the fact that at every ten miles up to Lake Baikal from Russia there is now a crossing station, that 16 pairs of trains can now pass over the line daily, and that in five weeks ending July 22nd the 10th and 17th Army Corps were brought into Kharbin, a force of 110,000 men all told. Horses have to come from Tomsk; but there is abundance of hay and grain in Manchuria itself, which is an astonishingly rich country and is now enjoying an exceptionally good harvest.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

Inaccurately Dispensed Prescriptions: Prosecutions.

EARLY in last month two interesting cases were heard at the city police-courts in connexion with the dispensing of medical prescriptions. The first case was that of a druggist named Heath who had been asked by a messenger from the health department to compound the following prescription written by Dr. J. D. McCrindle, assistant medical officer of health:—

Quin. sulph. ... ... ʒ iv.
Ac. sulph. *dil.* ... ... ʒ iv.
Aq. ad... ... ... ℥ vi.
M.
Sig.: A dessertspoonful every four hours as required.

The mixture should have contained 240 grains of quinine sulphate and 240 minims of diluted sulphuric acid. The messenger, a woman, left the prescription and called later in the day for the mixture. The defendant then asked her if the patient was very ill, because, he said, it was rather an extraordinary dose. He charged 2*s.* The woman handed the bottle to Inspector Jones who came into the shop and explained who he was. The defendant then said, "I did not put the half ounce of quinine in; I only put in half a drachm; I thought it was a mistake." On behalf of the prosecution it was urged that it was the duty of the druggist to make up a prescription obviously coming from a medical man without using his own discretion as to the amount of any particular drug which he should put in. It was also pointed out that the price of 23 grains of quinine was only 1*d.*, whilst the price of 240 grains was about 9*d.* Dr. McCrindle, who gave evidence, stated that he should have expected compliance with such a prescription. The defendant gave evidence on his own behalf and said that he should not think of putting half an ounce of quinine into a six-ounce mixture. The ordinary dose they were accustomed to make up was from one to two grains. When the woman called with the prescription he inquired the complaint of the patient and the address of the medical man and he would not make up the prescription until the woman came back and he had made these inquiries. He also stated that he thought that the prescription was too well written to have come from a medical man and concluded that it was a copy. After a long consultation the bench said that they considered the case to be one of the most important ever brought before them. Up to a certain point the defendant exercised a very proper discretion. But he did not go far enough. When he convinced himself that there was something in the prescription which suggested to his mind that there was possible danger to the patient he should have insisted that the name of the medical man was given to him and he might have absolved himself from all personal responsibility by consulting the medical man. The bench did not think that there was any dishonest intention on the part of the defendant but he had been negligent in his duty and they had no alternative but to convict, though they had tried in every conceivable way to discover whether it was possible to justify the action of the defendant. The penalty would be 40*s.* and costs.—The second case was that of Needhams (Limited). In this instance the messenger from the health department called at one of the branches of this firm and left the following prescription to be made up:—

Pot. iodid. ... ... ʒ vi.
Aq. chlorof. ad ... ... ℥ vi.
M.
Sig.. One teaspoonful with a little water three times a day.

The capacity of the bottle supplied by the defendants was only five and a quarter ounces and it contained only 334 grains of iodide of potassium. The dose given on the bottle was one tablespoonful instead of one teaspoonful, as ordered by the prescription. One tablespoonful contained 32 grains, while the dose ordered by the prescription was seven and a half grains. The prosecution complained chiefly of the size of the dose, which would have had injurious effects if taken. They did not suggest fraud but there was gross negligence. Dr. McCrindle in his evidence said that a dose of the size in question would have had a serious effect upon a weakly person. Cross-examining counsel tried to secure an admission that when a preparation was ordered in a six-ounce bottle the usual dose was one tablespoonful, but Dr. McCrindle refused to admit this. For the defendants it was urged that the greatest care was taken in the selection of assistants and that the person who was responsible for the error in question had served his apprenticeship with the firm and that they had never had the slightest complaint about him. There was no intention to defraud the purchaser, for the assistant had actually charged 4*d.* or 5*d.* less for the mixture than he should have done. Messrs. Needham employed Dr. A. Bostock Hill to go round from time to time and have prescriptions made up at their shops with the object of ascertaining whether their assistants were doing their work properly. The prosecution stated that it had been necessary on a previous occasion to caution the firm about carelessness. The bench held that there was no intention to defraud but that there was carelessness and for that the defendants must pay the costs of the prosecution.

Health of Worcestershire: Decline in the Birth-rate.

The county medical officer of health, Mr. G. H. Fosbroke, has recently issued his report for the year 1903. Only two districts in the county have materially increased during that twelvemonth—viz., King's Norton by 3359 and Yardley by 2470. On the other hand, one urban and 17 rural districts have decreased in population during the same period. The birth-rate in England and Wales for 1903, 28·4 per 1000, is lower than the rate for any year on record and that for the county of Worcester is below this, being only 27·9. Last year the rate of Bromsgrove North District, the average for which during the past ten years has been 29·2, was only 26·0, and Dr. C. Kidd, the medical officer of this district, remarks that "the matter is one with which a sanitary authority has little to do directly, it being a social and moral question rather than one of public health." The districts in which the highest birth-rates have prevailed are populated chiefly by artisans. The death-rate for the year is much the lowest as yet recorded for the county of Worcester. The lowest death-rate for any district is that for Malvern, which was 9·7, and this is closely followed by King's Norton with 10·2 and Yardley with 10·8. It will be noticed that the two last-mentioned districts are those in which the increase of population is most marked, so that the decreased death-rate is doubly satisfactory. The county mortality from small-pox has been low during recent years and in 1903 only equalled 0·003 per 1000 of the population. The disease was taken by tramps into seven of the ten districts invaded, which confirms the well-known facts that small-pox is taken by tramps from district to district and that there is practically no power to control those who have been in contact with the disease, if not actually suffering from it. The annoyance caused by tramps who infest certain parts of the county during the pea-picking is great, for they are not only depraved characters but are also fertile sources of infectious disease. Last year there were no less than 32 separate outbreaks of small-pox in the county, but as the local authorities of the districts in which the disease appeared had small-pox hospitals and the officials promptly adopted suitable precautionary measures the disease was quickly stamped out. Had small-pox broken out in Lye and Woolescote or Stourbridge urban or in Halesowen rural districts, possibly this fortunate state of things might not have happened, for there is no hospital accommodation for small-pox in these districts.

Pecuniary Circumstances of Hospital Patients.

Recent negotiations between the West Bromwich Trades Council and the local hospital afford another example of the manner in which hospitals might be abused if some bodies of working men could have their way. The Trades Council in question has made complaints against the medical staff of the hospital because of what it was pleased to call the unnecessary inquiries into the circumstances of the patients made by those members of the staff whose assistance had been sought The reply received from the secretary of the hospital on behalf of its governing body does not seem to have satisfied the Trades Council, for at a recent meeting dissatisfaction was expressed with it and it was urged that working men who contributed so largely to the support of the institution received their tickets for medical treatment from people who were supposed to exercise their discretion in connexion with their distribution Eventually a motion was passed expressing the hope that the distribution of tickets would in future be recognised by the hospital authorities and also that the medical men would refrain from inquiring into applicants' domestic circumstances

Sept. 20th.

LIVERPOOL

(FROM OUR OWN CORRESPONDENT)

Liverpool Infectious Hospitals Annual Inspection by the City Council

THE members of the hospitals and port sanitary committee, accompanied by other members of the city council, made their annual inspection of the corporation infectious hospitals on Sept 13th The six hospitals visited were the City Hospital South, Parkhill Hospital the City Hospital East, the City Hospital North, Priory road Hospital, and Fazakerley Hospital In the tour was also included a visit to the new hospital in course of erection at Fazakerley which is to cost over £130 000, exclusive of £38 000 paid for land This new hospital is to be a model of construction and equipment Prior to its commencement deputations from the committee inspected the best infectious hospitals in the country and have utilised the information gained in planning the new institution It may have been that this new hospital would not have been deemed necessary for some years to come but for the fact that Parkhill site on which a series of temporary buildings constitute the hospital, may be required at any time by the dock board who are the owners, for dock extension and the corporation is liable at any time to receive notice to quit Such an eventuality would have displaced between 300 and 400 beds which at a time of pressure would be a grave matter for the community The committee is therefore preparing for any emergency, appreciating the fact that the more infectious cases are isolated for treatment the less will be the danger of the spread of disease When the new hospital is finished every requirement imposed upon the corporation in regard to the treatment of zymotic diseases will have been fulfilled and the heavy expenditure in that direction for the past few years is likely to increase for a time The charge on behalf of the various hospitals for sinking fund interest, and maintenance now approaches £70 000 per annum, which is regarded in some important quarters as the limit to which the city ought to be expected to go with its present population The inspection occupied the committee ten hours Everything possible was inspected, including many wards where fever stricken patients were lying All the hospitals are equipped on the most approved modern basis The scrupulous cleanliness and cheeriness of the wards, rendered additionally pleasant by a tasteful display of choice flowers cultivated within the confines of the hospital grounds or obtained from the city parks and gardens, were greatly admired At the end of the day the company, which numbered about 30 and included the Lord Mayor sat down to dinner in the administrative block of the small pox hospital at Fazakerley Alderman Giles (the chairman of the committee) presided Complimentary speeches were made by the chairman the Lord Mayor, Dr E W Hope (the medical officer of health) and others Dr Hope stated that he never recollected the city so free from infectious disease

Hospital Saturday Fund School Collections

The Lord Mayor has received a letter from the secretary of the Hospital Saturday Fund respecting a suggestion which was made to the former some time ago with regard to a collection in the elementary schools in the city The result of the appeal is most satisfactory The teachers of Liverpool took the matter up warmly and have contributed amongst them upwards of £60, which sum has been handed over to the treasurer of the fund The secretary hopes that the collection may become an annual source of income to the fund

Liverpool's Death rate and the Ship Canal Novel Theory

The medical officer of health reported to the health committee on Sept 15th that the death rate in the city was gradually decreasing The total number of deaths registered during the week was 347, as against 378 in the previous week The death rate has now diminished to 24 9 per 1000, as against 37 7 three weeks ago Mr Isaac Turner, a member of the committee, said it was a singular and noteworthy fact that all the towns on or near the Manchester Ship Canal had been afflicted with similarly heavy rates of mortality — Liverpool, Bootle, Birkenhead Runcorn, Manchester, Warrington, [illegible] responsibility for Liverpool's late high death rate The abnormal rate of mortality was not peculiar to a particular part of Lancashire, it was prevalent all over the county

Donations to Local Charities

The treasurer of the Royal Infirmary has received £1000 from Mrs Barrow to endow a bed in memory of her husband, the late Mr James Barrow Mr W P Hartley has sent £500 and Mr Alfred Booth and Mr Edmond Johnston £200 and £100 respectively to the treasurer of the Liverpool Country Hospital for Children

Sept. 20th

WALES AND WESTERN COUNTIES NOTES

(FROM OUR OWN CORRESPONDENTS)

Pauperism in Swansea

AT a recent meeting of the Swansea board of guardians Mr I T Bircham, the Poor law inspector of the Local Government Board, animadverted upon the large number of cases of medical relief occurring within the union, which amounted last year to 2174 in a population of less than 100 000 He expressed the opinion that sufficient inquiry was not made before an order for medical attendance was given and said that many men would not perhaps consider it necessary to join a sick club or a friendly society if they could readily obtain the services of the parish medical officer when they fell ill Where able bodied men applied for relief for their wives in cases of confinement he advised that the relief should be given in the form of loan and the cost to the guardians subsequently recovered Figures were placed before the guardians showing that the amount of pauperism in Swansea had increased very considerably during recent years During the past ten years the rate of pauperism was reduced in England and Wales 12 per cent, in Wales and Monmouthshire 13 per cent and in South Wales and Monmouthshire 7 per cent, while in Swansea there was an actual increase of 22 per cent, notwithstanding the fact that the increase in the population of Swansea was only to the extent of 5 per cent, or about a third of the increase in the other districts named

Rhondda Health Report

The annual report of the medical officer of health of the Rhondda urban district is always of interest, relating as it does to a locality of recent growth with an industrial population of about 120 000 persons The birth rate in 1903 was 40 9 per 1000, which was the average rate for 25 years past The death rate in 1903 was 16 7 per 1000, a lower rate than has been recorded for 20 years The average death rate in the ten immediately preceding years was 20 3 per 1000 Dr J D Jenkins (the medical officer of health) points out that this low death rate was to a great extent due to the meteorological conditions which prevailed during the greater part of the year and not to circumstances dependent upon the amount of attention which the council chose to bestow upon the state of its district For some years past the Local Government Board has been urging upon the district council the desirability of increasing the staff of sanitary inspectors employed in the two valleys but the council still refuses to act upon the advice of the Board The six inspectors who are employed are expected to act as building inspectors and to inspect the laying of all new drains in addition to the specific duties laid down by the Local Government Board The amount of work to be done by these officials may be gathered from the statement that there are nearly 1000 workshops in the district and that last year they investigated and reported upon 1542 cases of infectious disease and disinfected over 1200 houses. Dr. Jenkins very properly suggests that some of their duties should be undertaken by other officials. The rainfall at the head of the great valley in 1903 was 113 inches and about the middle of the same valley it was 94 inches. With a knowledge of this very large amount of rain falling in the district it is at first a little startling to read that the most pressing need of the locality is the provision of a more abundant supply of water. It appears, however, that although for the inhabitants of one portion of the two valleys there is ample water storage, amounting to 200,000,000 gallons, there is for a population of about 60,000 persons in the great valley storage equal to only 8 days' supply, even when reckoning the daily consumption at 14 gallons per head—a very small amount when it is remembered that water carriage of excreta is universally adopted in the Rhondda valleys. The district council is to be commended for having provided a refuse destructor, which, however, only destroys 16 tons out of the 200 tons of refuse which have to be dealt with each day. An enormous quantity of household refuse is deposited on "tips," many of which are quite close to dwelling-houses.

Death of Mr. Donald Fludyer Boulton, M.R.C.S. Eng., L.S.A.

Through the death of Mr. D. F. Boulton a prominent figure has been removed from the social life of the town of Usk. About three weeks ago Mr. Boulton had an apoplectic seizure to which he succumbed on Sept. 18th. He was born in the year 1842 and received his medical education at St. Bartholomew's Hospital. Soon after qualifying he joined his father in practice in Usk, where for more than 30 years he was surgeon to the prison. As a judge of horseflesh and a straight rider Mr. Boulton was well known for many miles around Usk and he had the instincts of a true sportsman. He leaves a widow and daughters.

Bristol General Hospital.

At the half-yearly board meeting of the subscribers to the Bristol General Hospital, held on Sept. 12th, the president (Mr. Proctor Baker) expressed regret that the general subscriptions did not increase but spoke in warm terms of the growing support given by the working classes. Mr. Baker added that about £1000 must be spent on improving the isolation buildings and that the committee must soon add a new wing to the institution.

Sept. 19th.

SCOTLAND.

(From our own Correspondent.)

New General and District Hospitals, Glasgow.

The new General Hospital situated at Stobhill and the two district hospitals at Duke-street and Oakbank, as well as the new Nurses' Home at Woodilee Asylum, Lenzie—all erected and equipped by the parish council of Glasgow and the Lunacy District Board—were formally opened on Sept. 15th. The company, consisting of about 100 gentlemen, who took part in the proceedings drove from the Parish Council Chambers to the Stobhill Hospital. There they assembled on the lawn in front of the administrative block and Mr. George Dott, chairman of the parish council, in a short speech declared the three hospitals open. He referred to the simplicity in structure of the buildings, there being no ornamentation or decoration. The policy of the council, he said, had been to get the largest accommodation with the best equipment at a minimum cost and he thought that it had succeeded. After a short dedicatory service some time was spent in inspecting the buildings. The company next drove to Woodilee Asylum and took part in a similar function in connexion with the opening of the Nurses' Home recently erected there. The aim that the parish council has had in view in erecting the general and district hospitals is to permit of the dissociation of the ordinary poorhouse cases from those requiring active hospital treatment. The buildings at Stobhill, situated to the north-east of Springburn Park, are erected for the accommodation of the infirm class of poor and also children, while the district hospitals situated in Duke-street and at Oakbank, near Garscube Toll, will be reserved for acute cases. The Stobhill Hospital provides accommodation for 1650 patients, 100 nurses, and 70 servants. Houses are also provided for 20 workmen. The site extends to 54 acres and cost £8300, while the buildings, consisting of brick with stone lintels and sills, cost £299,836. The hospital consists of the following sections:—14 medical and surgical wards, four wards for aged and infirm inmates, one isolation block, 13 children's wards, nurses' home, medical officer's house, accommodation for officials, administrative block, laundry, mortuary, and gate lodge. The Duke-street, or Eastern District, Hospital will accommodate altogether 244 patients, 133 male and 111 female. In the male section there will be beds for 72 medical cases, 25 surgical cases, and seven skin cases; in the female section there will be provision for 36 medical cases, 25 surgical cases, ten children, seven skin cases, and four maternity cases. There will be also two wards for 44 mental cases, 22 male and 22 female. In addition there are in two blocks wards for probationary and isolation cases, a well-equipped operating theatre, mortuary, post-mortem room, and pathological laboratory; also a block in which are placed the administrative department and accommodation for 30 nurses and 12 other members of the staff. Owing to the limited space at disposal the architect had to adopt the plan of having the wards radiating from a common centre, thereby gaining the maximum of air space round each block. The site covers an area of 8429 square yards, while the cost of the buildings amounted to £75,006. The Oakbank, or Western District, Hospital consists of eight blocks built in a parallel series. The ward pavilions provide accommodation for 207 patients. The administrative department occupies a convenient position in the middle of the frontage. The receiving block contains male and female wards of three beds each. The surgical pavilion of two storeys contains two wards of 17 beds each and two of four beds each, the latter for septic and aseptic cases; also a well equipped operating theatre. The medical block has 12 wards—six with 15 beds each, four with three beds each, two isolation wards with two beds each, and six side rooms with one bed each. There is also provision for maternity cases and skin cases. There is accommodation in the nurses' home, which readily communicates with the different pavilions, for 34 nurses. The site covers an area of 7198 square yards, and the buildings, which are of brick, cost £71,530.

Sept. 20th.

IRELAND.

(From our own Correspondents.)

Enteric Fever in Navan.

At a meeting of the Navan urban council held on Sept. 15th a letter was read from the Local Government Board forwarding the report of its medical inspector, Mr. D. Edgar Flinn, on an outbreak of enteric fever which has recently occurred in the town. The inspector stated that during the month of August 11 cases—all confined practically to one area—had been notified. The sanitary condition of that area was unsatisfactory and the construction of a new sewer and the closure of a dangerous well were advised. It is reported that there are 14 cases at present under treatment and that three deaths have occurred.

Small-pox on the Arran Islands.

Some excitement has been caused in the city of Galway by the fact that small-pox has recently appeared on the Arran Islands situated near the mouth of Galway Bay. They are not far removed and there is daily communication between the islands and the mainland. The intercepting hospital in Galway has been renovated to prepare for any emergency. At the last weekly meeting of the Galway board of guardians Sir Acheson MacCullagh, Local Government Board inspector, requested the members present to make all arrangements possible in order to stay the spread of the disease. An old disused schoolhouse is to be transformed into a hospital and tents are being provided for nurses. The Rev. Father Farragher, the parish priest of the island, has contracted the disease and the islanders have refused to send their children to be vaccinated by the resident medical officer who is in attendance on him. The relieving officer has telegraphed and a second medical man is about to be sent by the Local Government Board.

Rainfall in Belfast.

In the month of August rain fell on 30 days to the amount of 4·90 inches, making the total for the year 25·68 inches. The average amount for the period in question is 4·26 inches.

The Milk supply of Belfast

For some time past a correspondence has been going on in one of the Belfast daily newspapers on the question of the milk supply of the city One writer, who is evidently opposed to anything like the municipal supply of sterilised milk, recommends that in the production of milk, in its carriage, and in its distribution methods should be adopted which would eventuate in its being supplied to the householders pure and not requiring any subsequent home treatment

Scarlet Fever in Newtownards

At a special meeting of the urban council of Newtownards, co Down, held in the town hall on Sept 17th, a report was received from Mr David Jamison, medical officer of health, to the effect that the epidemic of scarlet fever was not abating as 13 cases had arisen since Sept 7th making a total of 55 this year as compared with 25 in 1903 Mr Jamison recommended the closing of day schools and Sunday schools for a time and the boiling of milk It was decided to close the schools for four weeks There are 31 cases in hospital

Fees of Dispensary Medical Officers

The Local Government Board has written to the Glenties Board of guardians to the effect that if the guardians do not pay Dr T McDonald, who is acting as locum tenent in the place of the dispensary medical officer of Ardara, a remuneration of £3 3s per week for the month the Local Government Board will feel obliged to direct payment at that rate, it also requested the guardians to reconsider the question of the remuneration of the practitioner who acted as temporary medical officer of the Killybegs dispensary district in May The guardians decided to adhere to their original resolution on the matter to pay a lower fee stating that they saw no reason for the interference of the Local Government Board, seeing that the medical officers were satisfied

Small pox in Monaghan

At a meeting of the Monaghan rural district council on Sept 19th a case of small pox was reported in Dr J Henry's district at Drumhillagh

Sept 20th

NEW YORK

(FROM OUR OWN CORRESPONDENT)

A National Quarantine

THERE is a growing belief among the more advanced sanitary authorities of this country that the old and often very impracticable State quarantine system that has existed from the foundation of the General Government must be superseded by a well organised national quarantine under the sole direction of the Public Health and Marine Hospital Service The quarantine laws of the several States are crude and generally inefficient and at the same time incompatible with each other Such laws are often found to be seriously and unnecessarily obstructive of commerce and travel Another feature of the argument in favour of general laws and regulations governing quarantine and a central power managing them has lately been brought forward by the Government of the Republic of Mexico The quarantine of Texas is acting within its rights and duties to protect the people from yellow fever, but *it is contended* that the rules which it prescribed for that purpose were altogether too restrictive The Government of Mexico can make no appeal to our Government for the power to make quarantine regulations for the ports of Texas are conceded by the United States to Texas The agitation which this event is exciting *tends powerfully to strengthen the position of* the advocates of a national quarantine There is a prospect of an effort to secure the enactment of a law by the next congress creating a national system of quarantine laws and placing the management of the quarantines established by such legislation under the control of the Public Health and Marine Hospital Service

Revenue Laws affecting Physicians

The Collector of Internal Revenue has received instructions to the effect that a practising physician who without holding the special tax stamp of a retail dealer in liquors under the United States Internal Revenue laws furnishes his patients with distilled spirits, wine or malt liquors under conditions constituting sales of these liquors directly or indirectly, involves himself in liability to criminal prosecution under these laws unless he shows that the liquors thus furnished have been compounded into medicines by the addition of some drug or medicinal ingredient If the liquors are not so compounded into medicines by the addition of some drug he cannot sell them, even for medicinal purposes without involving himself in special tax liability

A National Association for the Study of Tuberculosis

This association is formed for the purpose of making an exhaustive study of tuberculosis and the best methods of prevention It is a culmination of the efforts that have been made during the past two or three years to combine the work of many societies in one effective organisation, fully equipped to cover the whole field of investigation Its chief office will be in New York There is no intention of *founding any sanatorium or dispensary for the treatment* of the disease The work planned for the present is the collection and dissemination of information of every kind bearing on the disease The association will constantly aim to encourage local authorities to adopt measures for the prevention of the spread of tuberculosis by giving them desired information and in this respect its office will be a centre of collected facts relating to every phase of the prevention of this disease Its first work will be the preparation of a directory containing exact and minute information regarding the 125 hospitals and sanatoriums in this country and Canada now devoted to the treatment of tuberculosis

Bedside Notes not Admissible in Evidence

The Supreme Court of New York holds that what are known as bedside notes are not admissible in evidence They were introduced into court during the examination of a hospital nurse who attended the plaintiff while a patient in the hospital She described the paper as a "temperature chart and said that such charts were used at the bedside of every patient for accuracy in recording symptoms Its contents related chiefly to the physical condition of the patient and specified particularly the injuries from which he was suffering The court stated that it was not aware of any rule of evidence which made such a paper, offered in such circumstances admissible

Pulmonary Tuberculosis among Street sweepers

Street cleaning Commissioner Woodbury of New York, himself a physician instituted an inquiry as to the prevalence of pulmonary tuberculosis in the corps of street-sweepers with important results Out of a total of 1872 men 283 were found to be afflicted with pulmonary complaints Of this number only 60 had tuberculosis The results of the investigation relieved the apprehensions of the men who became alarmed by the report of the physicians to the department who stated that more than 25 per cent of the men applying for sick leave had tuberculosis of the lung The low percentage of cases of tuberculosis among men who are constantly inhaling street dust in the city of New York *which on analysis has* been found to contain 62 per cent of filth of every description known in this city, was gratifying no less to the men than to the public

Sept 1st

FRAUDULENT VACCINATION CERTIFICATES —At the Old Bailey on Sept 14th Hugh Stanley Revell M R C S Eng L R C P Lond medical officer of the Wandsworth and Clapham Union who had pleaded guilty at the June Sessions of obtaining money from the guardians by means of fictitious charges for vaccination, surrendered *for judgment* The prosecution mentioned that the prisoner had defrayed the whole costs of the proceedings and the Recorder after mentioning that the prisoner had already been in custody for three months passed a nominal sentence which allowed him to be discharged The Recorder inquired whether the prisoner's name had been removed *from* the Medical Register and Mr Charles Mathews prisoner's counsel said that the General Medical Council was not at present sitting but that there was no doubt that the name would be removed

Obituary.

SURGEON-GENERAL JAMES JAMESON, M.D., C.B., K.H.S., LL.D.,

LATE DIRECTOR-GENERAL, ARMY MEDICAL SERVICE.

Surgeon-General Jameson was born at Kilburnie, Ayrshire, on August 15th, 1837. He graduated M.D. at the University of Glasgow in 1857 and entered the Army Medical Department in the same year, being gazetted Staff assistant surgeon on Nov. 9th. He was ordered to Canada in January, 1858, and he served for nearly 11 years in various stations of British North America, including Nova Scotia. During that period he was appointed, in 1862, assistant surgeon of the 47th (now the 1st Battalion "Loyal North Lancashire") Regiment and he followed the fortunes of that corps until his promotion. The regiment was ordered to the West Indies in December, 1868, and it was Assistant Surgeon Jameson's lot to proceed to Trinidad in medical charge of a detachment. Here, in 1869, he made acquaintance with tropical disease of virulent form—he had an opportunity, of which he availed himself, of showing his zeal, energy, and assiduity in the performance of his professional duties and he was rewarded by special promotion to the rank of staff surgeon "in consideration of his highly meritorious services during the epidemic of yellow fever at Trinidad." This promotion removed him from the regiment, in which he was a great favourite of both officers and men. Returning to England in May, 1870, he remained at home but a few weeks when he volunteered for service with the English ambulance in France during the Franco-Prussian war and he commanded a division thereof during 1870–71. It so happened that most of his time was spent in the company of the Prussian invading forces and not very long before the close of his service as Director-General he received the Emperor William commemoration war medal, by special act of grace conferred upon him by the German Emperor. At the conclusion of the war Staff Surgeon Jameson proceeded to the Bahamas where he served until 1875. Returning home for four or five years his next foreign service was in India, the Madras Presidency, where he remained from 1881 to 1886. During a portion of this time he was in medical charge of the 12th Lancers. We have received from a former officer of that regiment an appreciation which may well be given in his own words:—

"Poor Jameson was in medical charge of the 12th Lancers from their arrival in Bangalore in 1882 and was the first *non-regimental* medical officer that we had to do with. We very soon learned to appreciate his value. Professionally and socially he was found to be admirable, and among all ranks and among the families of officers, non-commissioned officers, and men, he was recognised as a true friend. He was infinitely kind and attentive, never sparing himself in any way when he could be of service to anyone. It was of enormous importance to us all to feel that we had at hand a medical adviser so tender in his ways and in whom we had such complete confidence. And he was always the best and most genial of comrades; an excellent sportsman—full of sympathy with every manly pursuit. He was everything that a man in his position should be—respected, loved, and implicitly trusted."

He attained the rank of Deputy Surgeon-General (subsequently changed to "Surgeon-Colonel") in September, 1888, his first service in an administrative capacity being as principal medical officer on the staff of General Lord Frankfort in Egypt, during the years 1889 to 1893, where, in the words of the general, "he rendered excellent service."

In 1893 he was promoted Surgeon-Major-General and became "personal assistant" (the post being that now known as Deputy Director-General) to the then head of the department, Sir William MacKinnon, K.C.B., whom he eventually succeeded on May 7th, 1896. He received a meritorious service reward in October, 1896, was decorated C.B. in 1897, and in the same year was appointed honorary surgeon to Queen Victoria.

Then came the "troublous times" of the Boer war. As head of the Army Medical Service he was responsible for the medical and sanitary arrangements of a campaign which attained dimensions far beyond the calculations of everyone—including those supposed to be "in the know." It must be in the recollection of all that a Royal Commission was appointed to make inquiry and to report upon the "Care and Treatment of the Sick and Wounded." The opinion of that Royal Commission was "that in no campaign have the sick and wounded been so well looked after as they have in this." Bearing in mind that at the outbreak of the war the establishment of the Royal Army Medical Corps was not even equal to peace requirements (it was "practically exhausted in supplying the First Army Corps and in manning the base hospitals") the sudden and long-continued "expansion" which became necessary was no easy matter. But Director-General Jameson "tackled" the difficulties with characteristic energy, and the verdict of the tribunal was one in which he was entitled to feel legitimate pride.

It is impossible for us to account for the fact that his strenuous efforts received no official recognition. There must have been some extraordinary misunderstanding or misconception of the character of the man who worked so loyally for his Sovereign and for the good of the service. Not only was his name absent from the Honours Lists, but he was requested to retire from his post after the completion of five years' tenure, it being understood that it was to be held by him for seven years (for a rule recently promulgated was not supposed to apply to him, but to his successors). For this premature dismissal no very satisfactory reason was forthcoming, the only plausible explanation being that reorganisation and reconstruction of the medical service were "in the air" and the authorities wished for "a new broom." This would have been better understood had the enforced retirement been carried out generously and gracefully, but the omission of all recognition came as a grievous disappointment, not only to the corps of which he was the popular chief, but to the whole body of the medical profession—to say nothing of his friends. The profession, however, hastened to do him honour by inviting him to a complimentary banquet on July 24th, 1901, which was presided over by Sir William Church, Bart., President of the Royal College of Physicians of London (who, it will be remembered, was a member of the Royal Commission).[1] He also received honorary degrees from three or four universities. It should not be forgotten that it was during his term of office that the Army Medical Department was converted into the "Royal Army Medical Corps" and substantive rank was introduced. As regards his personal character he was conspicuous for his loyalty to his officers and profession. Those who worked with him were struck with his thorough honesty, his generous confidence in all who served under him, and his ability to take a sound, commonsense view of any question which had to be considered. He had a keen sense of humour withal and was always "excellent company."

Surgeon-General Jameson married in 1864 a daughter of the Rev. R. W. Cartwright of Kingston, Ontario, who survives him, together with five sons and one daughter. Four of his sons are medical men, one being in the Royal Navy, two in the Royal Army Medical Corps, and one in private practice. The announcement of his death came as a shock to all who knew him, for he always appeared to be the embodiment of sound health and vigour. He had quite recently been to Norway on a fishing expedition and apparently he must have overtaxed his strength by fatigue and exposure. Shortly after his return he had an attack of thrombosis in both extremities and just when recovery was confidently expected embolism supervened followed by septic pneumonia. Death occurred at his house at Eltham on Sept. 13th. The funeral took place on Sept. 17th at Greenwich cemetery and was largely attended by relatives and friends, amongst whom were some of his old comrades of the 47th Regiment. The Director-General was represented by Surgeon-General A. H. Keogh, C.B., Deputy Director-General (Sir William Taylor being absent in South Africa), and his staff at the army medical office, and there were present several officers on the retired list as well as many now serving in the Royal Army Medical Corps. There was also a strong company of the Royal Army Medical Corps from the Herbert Hospital. The coffin was borne on a gun carriage provided by the Royal Horse Artillery who also furnished the firing party.

WILLIAM LEE DICKINSON, M.D. CANTAB., F.R.C.P. LOND.,

SENIOR ASSISTANT PHYSICIAN TO ST. GEORGE'S HOSPITAL.

A GREAT calamity has fallen on St. George's Hospital and School by the sudden death of Dr. Lee Dickinson, senior assistant physician, at the early age of 40 years. The closing

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[1] A report of the proceedings at this dinner appeared in THE LANCET of July 27th, 1901, p. 247.

SURGEON-GENERAL JAMES JAMESON, M.D., C.B., K.H.S., LL.D.

of a career which had performed so much good work for St George's and which promised so much more for medical science and for the public service must not be allowed to pass without some attempt to show how Dickinson was regarded by his friends and colleagues To the general public he was, perhaps, less known than men of his age usually are, for he was of a most retiring disposition Yet he had done enough to show what there was in him and he was well known at the various societies as one of the most rising of our younger physicians and pathologists Dr Lee Dickinson was the son of Dr W H Dickinson and the grandson of Dr James Arthur Wilson once well known as physician to St George's Hospital His education, both general and professional, was received at Winchester, at Caius College Cambridge, and at St George's Hospital He took the diplomas of M R C S Eng and of M R C P Lond in 1886 and 1889 respectively and in 1894 he was elected F R C P Lond In 1890 he took his degree of M B at Cambridge proceeding to M D in 1893

At an early period in his career he joined the medical staff of the school of St George's Hospital, of which his father is so distinguished a member He also held for five years the position of assistant physician to the Hospital for Sick Children in Great Ormond street resigning it when in February, 1894, he became assistant physician to St George's Hospital with the unanimous support of the whole staff He worked hard at the school and was looked on as one of the most valuable members of the teaching body, nor would he ever spare himself from duty, though he soon began to show symptoms of the complaint which has so early laid him low He became lecturer on medical jurisprudence and toxicology and much of his work was connected with the latter subject He was the author, or joint author, of several papers of value in the Proceedings of the Royal Society and the Transactions of the Clinical Society He was a successful lecturer and much esteemed as a clinical teacher He was much thought of by his poor out-patients, to whom he was remarkably kind and considerate As definite proofs of tuberculous mischief became evident he found himself obliged to request a change of climate and a period of repose Accordingly he obtained from the board of governors leave of absence for half a year and repaired to South Africa in the year 1898, where he lived in the neighbourhood of Harrismith with so great benefit to his health that many of his friends wished him to settle in

own what

sk rather

he loved

and his prospects of distinction in the practice of the art which he loved still more At first his resolution seemed to be justified His health improved and he was able to discharge his duties both at St George's and at the branch hospital at Wimbledon with the exact punctuality which seemed a part of his nature He was indeed the very model of a hospital physician, skilful in diagnosis, ready in practice lucid in teaching, kind and good to the patients unselfish in his devotion to duty, and by his fine powers of observation fitted to carry on the practice of his art to yet higher perfection

the thin spun life

So was it with him His friends had lately remarked that he seemed to grow more haggard and distressed but he made light of any foreboding and protested that he was well Indeed he seemed to become stronger and better at his father's house at Tintagel in Cornwall, until on Sept 6th without any warning, a sudden and overwhelming fit of hæmoptysis carried him off in a few minutes

So died a man of whom it may be truly said that no one knew how good he was, since he had not had the opportunity to show it It is not necessary here even to allude to the household virtues of the deceased His death will long be mourned by his family and his many friends

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SAMUEL JOHN HUTCHINSON, M R C S ENG, L D S

WE regret to announce the death on Sept 15th, at the age of 56 years of Mr Samuel John Hutchinson He came of an old Quaker family and was born at Helmsley in Yorkshire His early education was obtained at a local school and he subsequently came to London to study medicine and pursued his studies at University and King's College Hospitals and the Royal Dental Hospital In 1872 he obtained the diploma of Licentiate of Dental Surgery of the Royal College of Surgeons of England and two years subsequently he became a Member of that College He practised dental surgery and during his whole career took a keen interest in all that appertained to the advancement and welfare of that branch of medicine At the Royal Dental Hospital where he was one of the early students, he held the position of assistant surgeon and surgeon for 11 years resigning his appointment on being elected to the lectureship on dental surgery and pathology—a post that he resigned on his appointment as examiner in dental surgery to the Royal College of Surgeons of England He was at the time of his death consulting dental surgeon to the National Dental Hospital and University College Hospital He took an active part in the work of the Odontological Society of Great Britain and held in succession the offices of honorary secretary curator, president and treasurer To the British Dental Association he devoted much of his spare time and held for several years the office of president of the representative board He occupied the office of president of the association when the annual general meeting was held in London in 1901 At the time of his death he was one of the trustees of the Benevolent Fund His life was in all respects an active one and it is possible that the strain of a busy practice combined with his many other duties may have told severely on his health He died at his residence "Ford," Branksome Park, Bournemouth and was buried on Sept 20th at Hampstead cemetery

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DEATHS OF EMINENT FOREIGN MEDICAL MEN —The deaths of the following eminent foreign medical men are announced —Dr Anton Drasche extraordinary professor of medicine in Vienna and editor of the great 'Bibliothek der gesamten Medicinischen Wissenschaften'—Dr Hygino de Sousa, assistant professor of ophthalmology in the Lisbon Faculty of Medicine —Dr Albert Landerer, surgeon to the Schonberg Hospital Berlin and until recently chief surgeon to the Karl Olga Hospital Stuttgart Dr Franz Riegel, professor of medicine in Giessen and one of the most able clinical physician in Germany His name is specially associated with the recognition of the importance of the determination of hydrochloric acid in cancer of the stomach

Medical News.

FOREIGN UNIVERSITY INTELLIGENCE —*Bologna* Dr R Lambrinzi has been recognised as *privat docent* of Psychiatry and I Pathological Anatom younger brother of P on whom the Universi honorary degree has succeeding Dr Gaffky —*Grat* Dr Rudolf Muller has been recognised as *privat docent* of Pharmacology and Pharma cognosis and Dr Albert Blaschek as *privat docent* of Ophthalmology —*Leyden* Dr E C van Leersum of Amsterdam has been appointed Professor of Materia Medica and Pharmacology —*Naples* Palermo has been appointed in succession to the late D (*College of Physicians and Surgeons*) Dr Janus R Hayden has been appointed Professor of Diseases of the Urinary System in succession to Dr Robert W Taylor resigned —*Padua* Dr Giuseppe N Sterzi has been recognised as *privat docent* of Anatomy Dr Rodolfo Schwarz as *privat-docent* of Operative Medicine, and Dr Saverio Spangaro as *privat docent* of External Pathology —*Pavia* Dr Adriano Valenti has been recognised as *privat docent* of Materia Medica and Pharmacology —*Pisa* Dr Giuseppe Carli has been recognised as *privat docent* of Internal Pathology and Dr Giulio Anzilotti and Dr Fernando Fabrini as *privat-docenten* of External Pathology, also Dr Francesco Pardi as *privat docent* of Anatomy —*Prague* (*Bohemian University*) Dr L Syllaba and Dr A Vesely, *privat-docenten* of Internal Medicine, have been granted the rank of Extraordinary Professors —*Rome* Dr D de Blasi has been recognised as *privat docent* of Bacteriology

Darlington Hospital and Dispensary.—The committee of the above has received an intimation from Sir Theodore Fry that Mr. Andrew Carnegie has promised to give at least £1000, required for the extension of the hospital buildings now almost completed. £6579 have been received for this special object in three years, and to place the committee in the position to claim Mr. Carnegie's offer it will be necessary to raise a further sum of at least £5000.

A Long-Deserved Punishment.—On Sept 14th Thomas Fisher, a butcher of Norwich, was sentenced at Clerkenwell police-court to six months' imprisonment for sending to Smithfield the carcass of a bullock which had died from tuberculosis. The offence had been committed two years ago, since when the prisoner had been in America. This is a notable example of the truth of

> Raro antecedentem scelestum
> Deseruit pede Poena claudo.

Small-pox and Vaccination.—A very severe epidemic of small-pox has lately been in progress at Dewsbury, the number of cases under treatment on Sept. 12th amounting to over 100. Since February about 300 cases have been admitted to the isolation hospital but some of these came from outside the borough. Many persons previously opposed to vaccination have submitted themselves to this simple operation, but in spite of medical advice the Northern Union Football League decided that the match, Dewsbury *versus* Leeds, should be played.

Trephining and Crime.—A Laffan telegram from Indianapolis dated Sept. 14th states that on May 7th an order was passed by the Juvenile Court permitting an operation to be performed upon an incorrigibly criminal boy, aged 16 years, whose mother stated that he had injured his head 12 years previously. A portion of the skull cap was found to be depressed and the bone was trephined. It was found to be thickened and to be pressing on the brain. The boy rapidly recovered and his mental and moral condition steadily improved. On Sept. 14th he entered the high school.

Water and the Sale of Milk.—A curious resolution was on the minutes of the sanitary committee of the Heaton Norris urban council at the meeting on Sept. 15th. The clerk was instructed to write to an estate agent to inform him "that unless a proper supply of water be provided to the farm premises within 14 days the tenant will be prosecuted for selling milk without being registered for the purpose." A good supply of clean water is, of course, necessary in any dairy farm for the cleansing of the cans and other vessels used, but the wording of the resolution is ambiguous.

Small-pox in a Workhouse.—A serious outbreak of small-pox has occurred in Ashton workhouse. Nine cases were reported there last week. Relieving officers have been instructed not to send paupers into the workhouse unless absolutely necessary. At a meeting of the board of guardians on Sept. 15th it was suggested that the source of infection was the borough small-pox hospital, "which was built right on the boundary of the workhouse," and that it should at once be removed. The workhouse committee was instructed to make an investigation. There is no mention of revaccination being carried out. The constant occurrence of these outbreaks of small-pox is not creditable to the country. It causes a large increase in the rates but probably that fact does not influence the faddists.

Colne and Holme Joint Isolation Hospitals.—The new isolation hospital of the Colne and Holme joint hospital district committee was opened recently by Mrs. Mallinson, wife of Mr. Thomas Mallinson, J.P., chairman of the committee, at Meltham Moor, near Meltham, about five miles from Huddersfield. The hospital district comprises 13 townships of the Colne and Holme valleys. The new hospital is for all infectious diseases except small-pox, for which provision had previously been made at Moor Top, Meltham. The total area of the land acquired for the site was 19 acres, of which about seven acres have been used for the hospital. The purchase price was £817 10*s*. and the entire cost of the hospital, including the site, amounts to about £19,000, which has been borrowed at 3½ per cent. The scheme was sanctioned by the West Riding County Council and the Local Government Board in March, 1902. The buildings comprise a porter's lodge, administrat block, isolation block, with two pavilions for scarlet fe patients and typhoid fever pavilion, and a laundry blo In all cases the standard of space fixed by the Local Gove ment Board has been complied with and all the buildi have a south-eastern aspect. Mr. Joseph Berry of Hudd field was the architect. A good supply of water has b obtained and is estimated at 4000 gallons a day an reservoir has been constructed with a capacity of ab 25,000 gallons. Mr. W. Crowther, J.P., who presided at opening proceedings, said that the population of the valleys was estimated in 1901 at 54,100 persons, the rate value was £190,000, and 1*d*. in the £ produced £ They had been assured that a rate of 2*d*. in the £ w suffice for the scheme, but it had already got to 4*d*., and without doing much actual hospital work.

Donations and Bequests.—By the will of M E. Peacock of Eccles £1000 have been left to the Hospital Sick Children, Pendlebury, Manchester, to endow a cot, £400 to the Home for Crippled Children, Manchester, similar purpose. The testatrix has also bequeathed £50 St. Mary's Hospital, Manchester; £1000 to the Ca Pavilion and Home, Manchester, to endow a cot; £50 the Northern Counties Hospital for Incurables; and £ upon trust to pay the income to a niece for life and after death to pay such sum to the Salford and Pendleton Hos and Dispensary.—The Royal Berkshire Hospital, the Su County Hospital (Guildford), the Aldershot Hospital, Alton Cottage Hospital, and the Basingstoke Cot Hospital will each receive £1000 under the will of Mr McDonald of Farnham.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institut and others possessing information suitable for this column, invited to forward to [illegible] *ected to the Editor, not later than* [illegible] *morning of week, such information* [illegible]

Daniell, G. W. Bampfylde, M.R.C.S., L.R.C.P. Lond., has appointed Anæsthetist to the Edinburgh Dental Hospital.

Felton, Walter B., L.R.C.P.I., L.R.C.S.I., has been appo Medical Officer and Public Vaccinator for the Newlyn East Di by the St. Columb (Cornwall) Board of Guardians.

Hichins, F., M.D. Lond., M.R.C.S., has been re-appointed M Officer of Health for the Redruth (Cornwall) Urban Distri three years.

Johnson, W. Crosby, M.B., Ch.B. Vict., has been appointed Hon Physician to the Pendleton Branch Dispensary of Salford Hospital.

MacLennan, John Norman Emslie, M.B., Ch.M. Aberd., has appointed Government Medical Officer and Vaccinator at Y New South Wales, Australia.

McDonald, James Edward Fancourt, M.B., B.S. Melb., has appointed Acting Assistant Health Officer for the port of Bris Queensland, Australia, and an Acting Health Officer.

O'Brien, Richard Alfred, M.B., B.S. Melb., has been appo Health Officer and Medical Officer at Cairns, Queensland, Aus Visiting Surgeon of the Prison at that place, and a Health Offi

Rodger, T. R., M.B., B.S. Glasg., has been appointed Certi Surgeon under the Factory Act for the Sanquhar District o county of Dumfries.

Ross, Gordon, M.B., B.S. Melb., has been appointed Resident M Officer at the Brisbane Hospital, Queensland, Australia.

Simpson, Thomas Young, M.R.C.S., L.R.C.P. Lond., has been appo Junior House Surgeon at the Royal Albert Hospital, Devonpor

Style, F. W., M.R.C.S., L.R.C.P. Lond., has been appointed b Postmaster-General Medical Officer for the Brent (Devon) District Postal Staff.

Wood, G. Benington, M.B., C.M. Edin., has been appointed Me Officer to the Post Office and Medical Examiner to the Boa Education, Sandown, Isle of Wight.

Vacancies.

For further information regarding each vacancy reference shou made to the advertisement (see Index).

Birmingham, Aston Union Workhouse and Cottage H Gravelly Hill.—Resident Assistant Medical Officer. Salary per annum, with apartments, rations, and washing.

Central London Throat and Ear Hospital, Gray's Inn-ro Second Assistant Anæsthetist.

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VICTORIA HOSPITAL FOR CHILDREN, Tite-street, Chelsea, S.W.—House Surgeon for six months. Honorarium of £25, with board and lodging.

WEST LONDON HOSPITAL, Hammersmith-road, W.—Officer in X-Ray Department.

Births, Marriages, and Deaths.

BIRTHS.

… Bromley, Kent, the wife of A. … C.P., of a son.

… Pontefract, Yorks, the wife of … on.

… Harley-street, W., the wife of … of a son.

…ony, on the 30th August, 1904, … Camb., of a son.

WILLIAMS.—On Sept. 19th, at 9, Whatley road, Clifton, Bristol, the wife of B. Cecil Williams, M.B. Cantab., of a daughter.

MARRIAGES.

BARNES—ORMSBY.—On Sept. 13th, at North-street …

… Staffordshire.

TURNER—HAMILTON.—On Sept. 14th, 1904, at the parish church, Tavistock, Devon, by the Rev. Alfred Woodin, rector of Broughton, Hampshire, assisted by the Rev. H. G. Le Neven, vicar of Tavistock, William Turner, M.S. Lond., F.R.C.S., of 53, Queen Anne-street, Cavendish square, London, to Lily, only daughter of John Kerr Hamilton, of St. Rumon's, Tavistock.

DEATH.

BRANDT.—On the 19th September, at Royat (Puy de Dome), Annie, wife of Dr. G. H. Brandt, after a very short illness.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

THE PAYMENT OF MEDICAL CERTIFICATES FOR ELEMENTARY SCHOOLS.

AT a recent meeting of the Northants education committee among other business a discussion took place about the payment of medical certificates. The following is the report of the proceedings given by the *Northampton Daily Chronicle* of Sept. 17th:—

> The elementary education committee reported the receipt of a resolution passed by the South Midland branch of the British Medical Association expressing the opinion that all medical certificates in cases where children are stated to be unfit to attend school should be paid for by the education authority; and also a communication on the same subject from the managers of the Wellingborough council schools. The present practice is to require the parent to prove that his child is unable to attend school. The committee were of opinion that this was a question of great importance and as such should be decided by the education committee.—Mr. Allebone moved that the medical certificates be not paid for by the committee. When tried at Earls Barton the number of certificates grew to such an extent and the expense became so large that ultimately that authority ceased to do so.—Mr. Rennie Wilkinson seconded.—The Chairman said almost all authorities required the parents to supply the medical certificates.—After further discussion it was decided to forward to the bodies who had forwarded resolutions on the subject copy of the resolution passed by the committee in March, requiring the parents to prove that the child is unable to attend, and stating that the committee saw no reason to vary their previous decision.

The question as to who should pay the medical man for giving a medical certificate concerning a child who is of school age has been many times debated and is a somewhat difficult one to answer. In our opinion the case stands thus. No medical man should be expected to spend his time, his skill, and his trouble in examining children and in giving a medical certificate as to their case without payment. The State compels all children of a certain age to attend school. The expenses of education are now for the most part borne by the ratepayers who are compelled by the State to contribute towards the expenses of education. It is manifestly to the advantage of the ratepayers that the health of children attending school should be looked after and as the State compels parents to send their children to school an compels the ratepayers of any given district to provide the necessary funds for education it seems to us that it is the duty of the State to see that the medical men by whose efforts epidemics may be frustrated should be paid and the persons who ought to pay them are manifestly not the parents of … ratepayers as a body. The … found by an increased rate … whether the money should come out of the taxes or out of the rates—does not seem important. On the whole, we think it would be fairer that the money should be paid by the taxes, for in that case the expenses would be more equally distributed over the whole country; but if the parents are made to pay it is most probable that in the majority of cases the medical … are the … be ill and … desired by a person …

PASTOR HOWTON AND DEMONIACAL POSSESSION.

THE *Morning Leader* of Sept. 7th contains an article "From Our Special Correspondent" which is headed "A Demon Hospital." It discusses what it calls the wonderful cures of Pastor Howton of Glossop and a portion of the article runs as follows:—

> There is to-day a boy in the Home who is a living testimony to the Pastor's almost uncanny system of "divine healing." This boy, whose name is Wycliffe ——, was taken on April 25th last to Dr. A—— of John-street, Manchester, who is a specialist in the diseases of children. Here is Pastor Howton's report of the case: "In the presence of myself and my wife and his father and mother this lad was very carefully examined by Dr. A——. He reported that the child was suffering from paralysis even to … of the tongue. His spine was dead half way up. 'All …
>
> … for this boy!' I obeyed the voice, and I will show the result." The pastor opened the door and shouted "Wycliffe!" A cheerful little voice answered the call and in another moment Wycliffe was in the room—a well set up boy of nine, with a clear eye and quite a healthy intelligence.

We were struck upon reading this report by certain discrepancies and we accordingly wrote to Dr. Henry Ashby of 13, John street,

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